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The Massachusetts Medical Society.

PAPERS AND DISCUSSIONS OF THE SECTION OF PEDIATRICS

AT ITS MEETING AT THE HARVARD MEDICAL SCHOOL, BOSTON, JUNE 13, 1922.

THE TREATMENT OF DEHYDRATION IN INFANTS.

BY OSCAR M. SCHLOSS, M.D., BOSTON.

WHEN one considers that approximately three-quarters of the infant organism is composed of water, it is quite evident that the subject of water metabolism in infancy is one of importance. Each ounce of weight gained in a normal manner means the gain of approximately three-fourths ounce of water. Moreover, every metabolic process in the organism is dependent on the presence of a proper amount and a proper distribution of water; the transfer of nutriment and waste products, the secretion of digestive juices, the secretion of urine, are important examples. The nicety with which the water in the organism is adjusted is regulated by a remarkable mechanism. It is due to no accident that the normal water content of the blood and tissues is regulated to a fraction of a per cent. Concerning the nature and exact processes concerned in this regulation, only a few fragmentary facts are known. For this reason it would seem of little profit to discuss the subject from such an aspect. More, however, is known of the disturbances caused by a deficit of water in the infant organism, and fortunately something is known of the means of combating it. The rapid loss of water in infants causes a series of serious symptoms and striking perversions of function. These are known to all of you. Many of the symptoms of so-called "Cholera Infantum" or "Acute Intestinal Intoxication" can be attributed to the dehydration of the blood and tissues. This condition usually follows severe or prolonged diarrhea, but is often caused by lessened intake of water, due to refusal of fluid or persistent vomiting. In some cases all conditions are operative.

I have mentioned the nicety to which the water content of the body is adjusted. This adjustment is probably dependent to a large degree on the presence in some tissues of large amounts of loosely bound water which can be readily mobilized. Our interest in these water storehouses arises from the fact that they serve to keep constant the water content of the blood and that the serious symptoms of dehydration usually occur only when the blood shows a loss of water and increased concentration. In other words, it seems probable that in conditions of abnormal water loss the available fluid is drawn first from the tissues until this supply is depleted. After this, water is lost from the blood and serious symptoms occur. From the evidence available it would seem that the importance of tissues in the storage of water is relatively as follows: (1) the skin and subcutaneous tissue, (2) the muscles, and (3) the liver. This is indicated by the results of Freund, Steinitz, and others. In this connection it is of great interest and importance that the earliest clinical sign of water deficit is the loss of skin elasticity. This familiar sign is very definite and easy to demonstrate. When one pinches up a fold of normal skin it has a resistant or elastic feel, and if released suddenly it immediately returns to its former place. If the skin has lost water it does not have the normal elastic feel but can be described as plastic or putty-like, and when released suddenly it returns slowly to its former position. This sign varies in intensity, depending on the degree of water loss. It indicates the fact that the organism is laboring under a deficit of water which if not rectified will lead to serious symptoms.

When the degree of dehydration is marked there is a loss of water from the blood. An increase in the blood concentration in these cases has been shown by Reiss, Salga, Schloss and Marriott and Perkins. It would seem that the loss of fluid from the blood is the cardinal symptom. The various other profound changes are secondary to and dependent on this. Oliguria is constant and anuria frequent and the kidney is prevented from exercising its usual rôle in regulating the acid base balance of the body. Due to this, severe acidosis results. (Howland and Marriott, Schloss and Stetson.) Upon the same cause is probably dependent the retention of nitrogenous waste products in the blood. (Minsk & Sauer, Schloss.)

In 1918 I reported a study of cases of so-called intestinal intoxication which showed a marked increase in the non-protein nitrogen of the blood. It seemed that the symptoms were not dissimilar to those of uraemia, caused as in uraemia by defective kidney elimination, but due to the depletion of water and to resulting direct and remote alterations in the blood and circulation, rather than to pathological renal changes. It did not seem probable that the high non-protein nitrogen of the blood was due directly to the increase in blood concentration but indirectly to it through interference with the secretion of urine. General changes in the circulation have been demonstrated by Marriott and his co-workers. They found a diminished blood volume, diminished volume flow of blood, low blood pressure and capillary stasis. Marriott has called attention to the similarity of this condition to surgical shock. It would seem that all of these disturbances are due to the loss of fluid from the blood.

These in brief are the pathological changes caused in infants by a marked depletion of the body water, and upon these changes are dependent many of the severe symptoms which accompany the condition.

From a therapeutic standpoint the indication in all cases is to restore the water balance of the body to normal. The means necessary to do this depends on the degree to which the depletion has progressed and the severity of the symptoms. The necessity of giving large amounts of fluid to such cases has been recognized for many years. Large amounts of fluid by mouth is a useful procedure but is adequate only if the dehydration is mild, and in the absence of severe diarrhea and vomiting. Subcutaneous injections of isotonic salt solution have been a regular part of the treatment for a long time, and in the milder cases may be sufficient to restore a normal water balance, especially if the diarrhea has ceased or is slight. A useful addition to the methods of giving fluid parenterally is the intraperitoneal method introduced by Blackfan and Maxey. The efficacy of the subcutaneous and intraperitoneal methods is dependent largely on the degree of water loss and the severity of symptoms. Only a limited amount of fluid can be given by either method at one time; if the blood concentration is greatly increased and the resulting symptoms severe, the patient often succumbs before the water deficit can be restored sufficiently to influence the blood concentration. For this reason additional treatment is necessary in the severer cases. Since the cardinal symptom of severe dehydration and the cause of the severe disturbances is the increased blood concentration, any measure to be of most value should be one to influence this very quickly. It had been found that intravenous injection of isotonic solutions had only a very transitory influence on the blood concentration, and practically none on the symptoms. The blood showed some dilution for about fifteen minutes after the injection, but the concentration quickly returned to its previous level. This experience was quite in accord with the observations on animals by Underhill, Mendel and others. It then seemed advisable to try the effect of intravenous injection of hypertonic solutions following the injection either subcutaneously or intraperitoneally of an isotonic solution, the object of the hypertonic solution being to increase the blood volume by its osmotic pressure. Two types of solutions were tried—hypertonic salt (sodium chloride) solution and hypertonic solutions of glucose. Both had the effect of reducing the concentration of the blood to a marked degree, which effect persisted from two to four hours. Both promoted the secretion of urine, but in this regard the glucose was much more effective. Moreover, it was found that the glucose given intravenously was retained to a large degree, only a small amount appearing in the urine. Since most of these patients are greatly in need of food the calorie value of the glucose is not negligible.

The treatment as applied to the cases of severe dehydration is as follows: the patient is given a subcutaneous or intraperitoneal injection of saline or Ringer's solution, and within one hour an intravenous injection of a 10% glucose solution. The amount of isotonic saline or Ringer's solution to be given varies with the size of the infant, the usual amounts by subcutaneous injection varying from 80 to 300 c.c., by intraperitoneal injection from 125 to 400 c. c. Twenty c. c. of 10% glucose solution per kilo of body weight is the amount which is usually given. It is important that the glucose be given within a short time after the saline. It is of greatest importance, especially if the dehydration is at all marked, that an isotonic solution be given before the glucose; otherwise the treatment does no good and may do harm. An important precaution in the preparation of the glucose solution is that it should be absolutely clear. A precipitate, even in small amount, may produce marked and even serious reactions.

The treatment outlined may be repeated in five to six hours if necessary, the necessity to be judged by the condition of the skin and the general symptoms. Usually two or three injections of the glucose solution are sufficient. After improvement is pronounced the glucose injections may be omitted and occasional subcutaneous injections of normal saline are often sufficient to maintain the normal water content of the organism.

The effect of this plan of giving fluid is usually pronounced. There is an early secretion of urine, the condition of the skin becomes normal and the general symptoms rapidly disappear. Due to the removal of its cause, the acidosis is corrected, so that the use of alkali is entirely unnecessary.

In principle, what I have outlined presents little that is original. It is offered merely as a method of combating dehydration in infants that has proved extremely efficacious.

DISCUSSION.

T. M. Carpenter, Ph.D., Boston: Dr. Schloss has not considered the question of the mathematical side of the water balance. I think it would be interesting to know what the absolute amount of change in percentage was in the total water content of infants as compared with adults. Rubner has stated that with adults a reduction of ten per cent. of the water content results in serious disturbances. The determination of the water balance technically is extraordinarily difficult, and probably for that reason very little work in comparison with other metabolic factors has been done. In addition to that the familiar existence of water all around us has led us to say "what is the use of studying water balance?"

It seems to me that another interesting fact in Dr. Schloss' paper is the effect of the different methods of introduction, of either hypertonic solutions, water solutions, or glucose solutions. For a number of years I have been interested in the metabolism with reference to the method of introduction, and I have been studying the introduction of solutions by various routes, the effect of rectal introduction of sugars, the distribution of alcohol when inhaled and the metabolism of substances when introduced by mouth. I would be interested to know what route is most efficient and whether one can supplement the other.

Dr. Oscar M. Schloss, Boston (closing): In regard to Dr. Carpenter's question, the route by which water is given is of some importance. Most of these infants are suffering from severe diarrhoea or from vomiting. In the presence of vomiting, giving water by mouth is impossible. The water loss through the diarrhoeal stools is so great that it is almost impossible to give these babies sufficient water by mouth to replace the amount lost, so that this method isn't of any particular value. Infants retain fluids given by rectum poorly, the tube usually causing irritation, so that it is possible to give only a relatively insignificant amount in this way, so that we are restricted to the three methods I have mentioned—intravenously, subcutaneously and intraperitoneally.

One thing I didn't mention was the question of intraperitoneal injection. The giving of fluid intraperitoneally has the advantage of permitting the use of larger amounts of fluid than either of the other methods. It often causes a mild disturbance. It causes a sterile inflammation with exudate of cells, causing no apparent harm except as evidenced by abdominal distention. In most instances it should not be repeated under 24 hours.

With regard to our general knowledge of the water balance in infants, little is known. There have been no accurate determinations due to the difficulties which Dr. Carpenter had in mind. That is, in determining with accuracy the amount of water lost in various ways.

The Pediatrist's Opportunity.

By Eugene R. Kelley, M.D., Boston.

Child hygiene is largely the outgrowth of the pediatrist's vision, enthusiasm and faith. Child hygiene as a result of its meteoric expansion in the past fifteen years has in many ways grown away from the pediatrists and the medical profession. Child hygiene now involves many fields of social endeavor which have hitherto been remote from the purview of the medical mind, as, for example, the subject of supervised play. Child hygiene now numbers among its exponents, and is yearly bringing into greater public prominence members of professions and specialized groups within professions, the scenes of whose original training are far removed from the anatomical laboratory or the clinical amphitheatre. Their ways are not our ways, their language is not our language, their thoughts are not our thoughts. Yet, as I will later attempt to illustrate, this subject is essentially one that must rest upon medical and hygienic scientific principles for its bed-rock foundation if its present glowing promise is to be fulfilled.

In the world of scientific medicine the group that by training, aptitude, previous experience and natural association of every-day work comes into most direct contact with the problems of child hygiene is the children's specialist, the pediatrist. Hence, as I see it, child hygiene may be most truthfully and accurately characterized as the pediatrist's opportunity. But as I look back upon the impetuous sweep of the rising tide of popular interest in this subject during the years just passed the question occurs if the title ought not to go a word further and read, "The pediatrist's *vanishing* opportunity."

Perhaps the most striking recent feature in the child hygiene movement has been its constant expansion. There is but little exaggeration in saying that infant feeding was almost synonymous with child hygiene in the beginning of the modern development of the subject. The possibilities of school hygiene had been recognized by pioneers in the ranks of public health and public education three generations ago. Here and there dentists were beginning to emphasize the significance of oral hygiene; public health nursing in its modern form was making itself known about the same time, but in my own experience as a medical student, I can testify that "modified milk" summed up about all that was taught inside the medical school in reference to child hygiene; and, broadly speaking, little more than that was actively discussed by any organized groups outside the medical school.

It sometimes seems to the medical health administrator that the medical mind still looks fixedly at the magic formulae designed to make cows' milk safe for infancy almost to the exclusion of real comprehension of the wide ramifications of modern child hygiene as a specialized division of public health and public welfare. Sometimes it seems as if the procession has passed him by and instead of the pediatrist being in the front rank of the movement we see there public health nurses, dentists, dental hygienists, nutrition workers, physical educators, social service workers, chemists, bacteriologists and (a slightly pathetic figure in this connection) the medically trained professional health official who never enjoyed the advantages of any special training or experience in pediatrics. This statement, of course, does not include the small group of pediatrists who have perseveringly fostered the infant and child hygiene movement from its inception; brought it through its early years of financial inanition; overcome those acute organization exanthemata which afflict the childhood of all our voluntary health movements as inevitably as do measles their little human patients, and who now can see with satisfaction the prominent place child hygiene has come to assume in our national life, with countless numbers of enthusiastic laity who are today demanding greater attention to child hygiene all over the land. But when the health administrator surveys this rapidly growing army of child hygiene enthusiasts, and looks about for the pediatrists to act as the commissioned officers and drill sergeants of this new army, he doesn't find them—at least not in any such numbers as they should be found.

This is a serious situation. The child hygiene movement needs the pediatrist. Increasingly, I think, the pediatrist of the future will need the child hygiene movement. I cannot but feel that medicine in general and the specialty of pediatrics in particular are failing to measure up to their opportunities in relation to child hygiene, particularly along the lines to which I will now briefly allude:

(1) There is an obvious failure on the part of medical schools to teach the phenomena of the normal in relation to infancy and childhood. The average young medical graduate has some idea of how to proceed when confronted with a morbidity problem in relation to childhood. He is far more frequently than the proverbial nine times out of ten quite at a loss when consulted for hygienic advice by the mother of the well baby. Yet a refrain that runs throughout all the teaching of the child hygiene movement, a message that is being shouted at American motherhood today by lecture, by pamphlet, by prize school essays, by the daily press, by popular magazines for women, by stereopticon, movie and radio is short, hortatory and emphatic, and runs as follows: *Consult your doctor, and follow his advice before baby gets sick.*

(2) There is another way in which I feel the pediatrist is not measuring up either to his opportunity or his duty in this field. It is simply this. On account of his peculiar training and experience the community has a right to expect him to contribute his advice, time and energy in the child hygiene campaign as a public spirited citizen—not by lending a hand to a biennial two-day weighing and measuring campaign, with its hubbub and frequently misleading results, but by being on the child hygiene job all the time, talking it, urging it, in public and private, by actually practising preventive pediatrics on both a fee and a free basis. The public and all the other workers in the campaign look to the pediatrist as the natural leader *par excellence* of the entire child hygiene movement, and, as I have previously said, it is rather a shock to look about and see how few of our best and busiest pediatrists are really actively engaged in any phase of continuous child hygiene service.

A new federal measure which has been so extensively discussed that it needs no comment here, the so-called Sheppard-Towner Act, has introduced a new and extremely far-reaching factor into the subject of child hygiene in this country. It is not intended to discuss any of the principles involved in this act at this time. I only wish to point out to you how this law has generally stirred up public interest and awakened public opinion as to the potentialities of a comprehensive national child hygiene program, regardless of the existing differences of opinion concerning the soundness of the principles involved in this particular measure.

The people are thinking, talking and eager to learn more about child hygiene. We have notable examples abroad of tremendous interest in this subject awakened during and sustained since the war. Sir George Newman, Chief Medical Officer of the Ministry of Health of England, states the fundamental importance of the subject in three terse sentences: "The health of the mother and child is obviously the primary step in the health of a community. For here is the source of a nation. It is almost true to say that, from a health point of view, what the mothers and children are, the nation is and will be." The thing that strikes a health administrator most forcibly in reference to child hygiene when contrasting conditions in this country with those of England is the practically universal acceptance there of the national and local governments' responsibility in the matter.

The following table shows the astonishing rate of growth of the maternal and child hygiene movement in England and Wales in recent years as reflected in the statistics of the number of infant welfare centers, the number of nurse workers, and the infant mortality rate. Unfortunately, the number of full-time and part-time pediatrists and medical child hygienists are not given, but that they are very numerous can be judged from the context.

ENGLAND AND WALES.
Child and Maternal Hygiene.

Year	Health Centers Number	Non-Medical Workers Number *i.e.*, Nurses and Nutrition Workers	Infant Mortality Rate
1913	No report	No report	108
1914	250	" "	105
1915	400	" "	110
1916	720	" "	91
1917	970	2555	96
1918	1133	3038	97
1919	1412	3074	89
1920	1754	3359	80
1921	1960	Not given	Not given

The degree to which governmental child hygiene directly affects the people of England is epitomized in the statement of Sir George Newman in his last available report that in 1920 "at least one-sixth of all babies born came under the regular supervision of the doctors and nurses of the infant welfare center in addition to a much larger number visited in their own homes. *These are ordinary normal babies.* They are brought for observation and advice, not for treatment. The center is not an out-patient department nor a treatment clinic." In other words, this is nation-wide practice of infant hygiene in contrast to practice of pediatrics as the term has hitherto been understood. I have cited British progress in child hygiene at some length not because I think the system is one that will ever be adopted *en masse* in this country, but because I believe it is a fair picture of the rate of development in child hygiene work which we may anticipate with absolute certainty in the next ten years. This means that medical men must be found to take charge of these clinics and the medical men ought to be, whenever possible, pediatrists trained in preventive pediatrics.

Other factors, of course, have entered into the stimulation of public interest in child hygiene besides the passage of the Sheppard-Towner Act and the example of the English child welfare movement. The increased interest in such specialized phases of child hygiene as nutrition, dental hygiene, school hygiene and physical education all throw into greater prominence the fact that child hygiene is a mighty national problem and, regardless of the advances along these specialized lines, that in the last analysis it is an indivisible and predominantly medical problem.

Our failings in national physique as revealed by the draft examinations and the newer developments in the great subject of mental hygiene also show that the problems uncovered point back largely to child hygiene as the means by which we can best hope for the correction of these national deficiencies.

What I want to make clear is that this problem is one that calls for highly technically qualified leadership. At the present time there is a very definite tendency towards the development of non-medical leadership in the child hygiene movement in this country, with all the attendant dangers to the cause that such a development entails.

No one recognizes this danger more clearly than the representatives of the two other professions that have been thrust by force of circumstances into positions of leadership in child hygiene—the nursing profession and the as yet but partially formed profession of social work. To a lesser degree nutrition experts and physical educators are also having forced upon them the problem of shaping policies and ways and means of practical procedure in child hygiene. Frequently in the past three years have I heard representatives of these various professions plead for the great need of qualified medical personnel to take the lead in shaping our rapidly, even if largely unconsciously, developing national policy in child hygiene.

Coming to the real crux of this paper, I wish to present the reasons why it seems to me that it is imperative that the specialty of pediatrics should not merely continue, but should greatly extend its past leadership in the development of the child hygiene movement. To fully show what this means it is necessary to face at once a fact that medicine as a profession has always refused to face; viz., that clinical medicine does not to any appreciable degree teach the art of preventive medicine. It does offer, however, considerably more than a bowing acquaintance with the fundamental sciences of preventive medicine or hygiene. Medicine has from time immemorial focused upon the attempt to mitigate the course or prevent disastrous effects of already-established morbid processes. It has had pitifully little to do with endeavoring to prevent morbid processes from beginning, as Sir James Mackenzie has so forcefully pointed out in his revolutionary little book, "The Future of Medicine."

Nevertheless, because the basic knowledge for either curative or preventive medicine must be the same, and because training in clinical medicine is, in my judgment, unquestionably the best preliminary training yet devised for child hygienists, any other professional group carries heavy handicaps when it assumes, or, as is more commonly the case, is drafted for responsible executive positions involving formulation of policy and methods of procedure directed toward the whole broad field of child hygiene. Here lies what is at once the opportunity and moral duty of pediatrics and the greatest danger our national child hygiene program now faces. I refer to the crying need for pediatrists with vision and training on the preventive side of medicine to assume leadership in this field, and, failing this, the danger of the movement's dissipating much of its present energy and forfeiting much of its present enthusiastic support, as a result of untrained leadership of non-medical individuals. In addition to the relatively small number of physicians with pediatric training needed to be transformed entirely from the old man of clinical medicine into the new man of child hygiene to furnish the full-time teachers and general staff of our army of child hygiene workers, I also put in a strong plea for all pediatrists to engage *actively* in such degree as individual gifts of personality and circumstances of environment may permit in the business of helping to train and guide this growing army of non-medical child hygiene workers.

Among many reasons which could be expanded to great length in support of the statement that a medical background in general and a specialized pediatric background in particular are almost a *sine qua non* in the development of proper perspective in child hygiene, these few may be specially cited. Or it might be more correct, as well as more forceful, to put it the other way round and say that the following roots of the child hygiene problem grow out of a soil which only medical training fits one to cultivate intelligently.

1. A large share of our present-day child hygiene program is still greatly affected, or, in fact, made necessary by conditions handled hitherto through clinical medicine alone. I refer to the great group of child hygiene problems growing out of the acute infections of childhood — sequelae and complications traceable directly back to previous attacks of measles, whooping cough, scarlet fever, meningitis, poliomyelitis, etc.

2. Another group of infections not so exclusively allocated to childhood—in fact, diseases affecting adults equally or more, but which create no small fraction of the problems of the child hygienist—are gonorrhoea, syphilis and tuberculosis.

3. Still another group of morbid conditions which complicate the child hygiene problem, and which call for medical background for their intelligent handling, are those numerous developmental or acquired physical defects of childhood, of which defects of vision and hearing, adenoids and postural defects are prominent examples.

4. Another great factor in a successful child hygiene program is the ability to recognize and evaluate properly the bearing of nutrition and malnutrition and to apply appropriate measures to all problems relating to the digestive and assimilative capacities of the child. No argument is necessary to show that medical training is indicated here, but much awakening within the profession is still needed to convince both the doctor and the layman that to really cope with the child hygiene problems of this group a medical *plus* training is needed. The *plus* represents real knowledge of the basic sciences of nutrition and food values and an appreciation of the art of child nurture generally.

5. Nor can we for a moment overlook the fact that child hygiene demands a keen appreciation of the fundamental importance of mental hygiene as applied to child life!

To properly comprehend and, as far as may be possible, provide compensating and protective processes for the feebleminded; to be able to plumb the psychological depths of childhood phobias and incipient childish psychoses; and, in general, to understand the best methods of adjusting the unfolding mentality of the normal and, still more, of the super-normal minded child, is an essential part of the program of child hygiene.

To give the impression that child hygiene should be held as the exclusive preserve of the pediatrist would be grossly unfair to many other professions and specialties doing pioneer and invaluable work in this great field, but to do justice to these groups would too far transcend the limits of your patience and the rules of this section. Suffice it to say that I wish to pay hearty and sincere tribute to them all. More power to them all! The nurse, whether institutional, public health, district, tuberculosis or industrial as to specialty, fills a commanding place in the program. The dentist and dental hygienist, the nutritionist, the research worker, the psychologist, educator and social worker—all have their indispensable part to play; but I hope I have to some degree made clear the fundamental non-substitutable (if there be such a word) position that the child hygiene program reserves for the pediatrist. I trust I also have indicated the growing feeling of dismay with which the health administrators of this country look about them and see the so inadequate response of volunteers from the pediatrist ranks coming forward to fill these positions. The financial reward of the medical child hygienist is very meagre, and the work involves to a large extent the surrender of that complete individual freedom of action which is so dear to the medical heart; but I know of nothing in the whole range of medicine, hygiene, sociology or public service where the opportunities for scientific, lasting, humanity-benefiting service are greater today than in this field of child hygiene.

DISCUSSION.

Dr. M. E. Champion, Boston: Dr. Kelley has given you an outline of what we hope child hygiene will be in the future. I merely want to touch on a few concrete points where the pediatrist can do good at the present moment. There are certain fields which are decidedly open to him at the present time which are not being covered in any adequate way. I suppose that all types of work outside of that carried on by the individual practitioner may be divided into public and private. As a matter of fact, all the public work has grown out of some type of private action. In some places the public action is yet to be undertaken. The City of Boston, I suppose, is a pretty good example of that. The people who control the appropriation of money in the City of Boston have never seemed willing to appropriate enough money to carry on child welfare work. As a result the work that is being carried on in this field is carried on by private agencies. Therefore the pediatrist who works with the private agency has the opportunity of shaping to a certain degree the course of the public agency when it takes over the work.

There are certain types of work which ought to be mentioned. In the first place, there is the administrator in the private agency. He is often the secretary or perhaps the president of the board or serves on some advisory committee. And then there is the man who carries on the clinical work. That man has an important position, for if he is wise, he will start the child hygiene work in such a way that when the community takes it over it is not involved in the complications of "State medicine" — complications which are hard to get rid of once they are fixed on any public agency.

Then there is the other type of worker, the one who is working in the public service and is paid out of municipal funds. There again he may be an administrator, but these administrators are not very common.

I have been much interested in looking over the lists of those in charge of *State* child hygiene activities in this country. These directors have been generally public health nurses. It must be acknowledged, however, that since the much-criticised Sheppard-Towner Act has gone into effect we have seen more physicians going into this field.

Furthermore, there are other opportunities as well We need investigators, physicians who are qualified to look into the question of infant and maternal mortality, because these figures which Dr. Kelley has put on the board are hard to explain — very hard to explain — particularly the 75.9 per cent. mortality among infants. I wish that we could feel that we knew exactly the reason why we had such a tremendous drop in infant mortality last year. We need trained men to investigate that.

There is an opportunity which I want to stress in closing, which occurs, at present, in 355 cities and towns in Massachusetts: It is in connection with the position of school physician. Some months ago I attended a legislative hearing where somebody said that only the poorest doctors in the town were school physicians. That of course was an unjust statement to make. Nevertheless, many of the best trained men do dodge that job. It is an opportunity for public service, though not for making money, and if we could get physicians throughout the State to feel that there is an opportunity to take charge of our children when they are in a normal state and to keep them in that state and thereby to help the municipalities to do good service, it would do more for child hygiene than anything I know of.

Dr. E. H. Place, Boston: After hearing this paper of Dr. Kelley's, I can only emphasize a few points which are important. The first that he spoke of was the absolute necessity for physicians doing work among children to be well grounded as to the normal child. Many of us have graduated from medical school so long ago that we look back and see that very little information was given on the care of the normal child, and many of these problems put up to us by mothers we are unable to answer. It seems to me that that must not happen in the future. It seems to me that the coming generation of physicians must be made to recognize and know the normal child, and that applies to all of us who are now practising.

The child hygiene movement at the present time is going forward very rapidly, and it is obvious that the movement is going still farther, and the only question is — who is going to guide that movement? Unless it is going to be guided by pediatrists, it is going to be guided by people lacking in knowledge and it is going to be guided along lines which are undesirable. So, from every point of view, it seems to be our responsibility to see that it is to be developed upon a sound, medical basis.

Dr. Ella G. Stone, Boston: When Dr. Kelley was speaking, I was thinking of the large number of nurses and social workers engaged in child hygiene activities, mostly women, no doubt, judging from Dr. Kelley's urgent appeal that more medical men enter this field that these women may be properly directed.

It seems to me that here must be an opportunity for women physicians to do their best work. Women have a natural interest in children and do not need the stimulation that men require. The average young man who starts out on his medical career doubtless knows or cares little about children. His natural inclination generally leads him into other lines of medical work. On the other hand, the aspiration of the average normal woman, whether she be a member of the medical profession or any other profession, is to have a home and children of her own to love and care for. The vocation of nursing and caring for children seems foreign to the nature of men. Way back in the dawn of animal life, sex determination ordained that this should follow without any discredit to the male. Let us be wise in time and try to coördinate our child betterment endeavors with adult welfare or all our effort will be worse than useless. We may wake up to find that we have been simply amusing ourselves for profit or caprice in experimenting with plans for the betterment of the status of children only to throw them into the scrap heap when matured.

For the best and highest development women need the soul-satisfying work of caring for children. It is nature's decree — their dominant impulse is maternal. Therefore, in view of woman's natural selection for the purpose of reproduction and care of children, the fitness of encouraging women physicians to enter the child hygiene field seems apparent. I am sure they do very acceptable work.

Dr. J. L. Morse, Boston: I was much surprised by one thing that Dr. Kelley said, and that is that social workers or public health workers would like to get information from doctors. With two exceptions, I have never met a social worker or nurse that desired to get any information from a doctor or be told anything by a doctor.

In speaking of the different classes of people in social work, we have one class that is in it for amusement or because they haven't anything else to do. Then we have another class, that is being paid for it — the social workers and the nurses. No wonder the interest of the social workers is being stimulated! The nurses are also getting paid for their work. No wonder they are interested! — they have a good job. Now the poor doctor is again asked to be the goat, as all of us now are, to give his time and work for nothing, or if he doesn't give it for nothing, to give it for a salary which is entirely incommensurate with what he could earn in any other way. It may be the doctor's duty to take up this work, as it is his duty to take up a great many other things, but he has got to do it as a duty and look for his recompense in heaven and not on this sphere. That may be one of the reasons why doctors are not interested. They are expected to do it all for nothing.

Dr. Eugene R. Kelley, Boston (closing): Some of the things brought out in the discussion were very interesting to me. I want in closing to comment on some of the things which Dr. Morse said; but the first thing I want to comment on is that there is a great and growing willingness among well-informed people to pay for prophylactic advice. You would be surprised to know the number of times people in my position, *i. e.*, public health workers, find the truth of that statement. The position of the young clinician that he will not take any money unless he can deliver something directed toward a correction of a morbid process is fundamentally wrong. There is an unlimited opportunity for financial return for the pediatrist practising hygiene on the fee basis, and I don't think it is being cultivated. The great army of pediatrists is refusing to go half way. I think it is ethical for us to urge them to do it and to urge the people to pay them.

Dr. J. L. Morse: That is a large part of my work, Dr. Kelley.

Dr. E. R. Kelley: But you are an exception. That is, people are ready to pay for the advice. There are one or two men in Boston and one or two in the Middle West and Dr. Mason in Baltimore who are all actively hammering on that point throughout the country, but most pediatrists are not trying to practise preventive pediatrics.

The point brought up as to the exceptional opportunity of the woman physician is to a limited extent true. So much has been said about women not being wanted to be considered as women *per se* nowadays, that I have grown chary about bringing it up; but I agree that there is a peculiar opening in the child hygiene service for woman physicians. They can get the approach to the mothers quicker than the average male pediatrist. I don't think that holds, however, after the individual acquaintance has once been made.

Then we have to look at this question along statesmanlike lines. After all we are faced with the grave uncertainties of race as a world-wide problem, and one fundamental fact which we can get from the chaos of facts is that the birth rate of the white race is going down and the only thing we can do is to save more of these who are born. So from the patriotic basis the child hygiene movement ought to be advanced. We are not going to have unrestricted immigration in the future, and the future of this movement depends on the patriotism and self-sacrifice with which the people of this country take up this question.

The points which Dr. Morse raised I don't know how to answer. It is, I feel, unfair to the nursing profession and to the social workers. We have to stand that trying attitude of the nurse and social worker. On the other hand, there is another side to it which you will never adequately comprehend so long as you stay in clinical medicine. You have got to get out of it and you have got to get to the point where the nurses and non-medical public health workers will have confidence in you. Then you learn they have a feeling that they are being pushed aside by the hauteur of the physician. After a while when they find perhaps they haven't made so many more mistakes than he they rise to a point of indifference to the doctor's attitude. I think Dr. Morse's way of solving the problem isn't right. The social workers are guilty of many errors of omission and commission, but there is also another angle to it, and that is the need of the medical profession reaching them when they are young and plastic and to teach them in a sympathetic and broad-minded fashion how best to do their work and pay proper ethical tribute to the medical man's rights. I think they can come back at us and say they haven't had that treatment from the medical profession. I once had this point of view ably presented to me by a nurse who spoke of the growing breach between the medical and nursing professions. She was both a daughter and a granddaughter of a physician and knew the medical side of it.

Tonsillectomy in the Contagious Diseases.

By Edwin H. Place, M.D., Boston.

The importance of the tonsils in the acute infections as a point of attack and as a portal of entry for infections, as, cervical adenitis, cervical cellulitis, arthritis, endocarditis, pericarditis, septicaemia and pyaemia, etc., is so much a matter of common experience as to require no demonstration here. In scarlet fever and diphtheria this is particularly striking. In scarlet fever occurring in tonsillectomized cases the throat symptoms are almost invariably slight even to the point of absence. In a few cases under my observation in which only one tonsil had been previously removed the tonsillectomized side of the throat was nearly normal, while the tonsillar side showed the usual throat picture of scarlet fever. Severe faucial diphtheria is excessively rare in tonsillectomized cases, and when diphtheria of the throat occurs in such cases it is posterior to the posterior pillars. It is not in the scope of this paper to enter a discussion of the function of the tonsils if any. In our experience there has been little, if any indication of a deficiency in the resistance of tonsillectomized cases. In spite of abundant evidence of the disastrous part played by the tonsils in the acute contagious diseases a tremendous conservatism has looked askance at any operative procedures in these cases. This has been chiefly on the basis that the throat wound would increase the danger of infection and partly because of the fear of anesthesia complications, hemorrhage, etc. In the early days of our experience, beginning in 1906, a few operations were unfavorable, no benefit occurring. This was, however, when tonsillotomy rather than tonsillectomy was practised. The harmlessness of the operation was early brought to my attention by a case of a school teacher who was operated on the second day of a severe tonsillar infection. She had had many previous sore throats and the operation was planned for the next vacation. Before this time, however, she developed a severe throat and decided to have her tonsillar illness and operation at the same time for economic reasons. The afternoon of the same day, it was found that the throat infection was that of scarlet fever. Although the onset was severe the decline was extremely rapid and satisfactory and no complications occurred. The throat was not more than usually sore for tonsillectomy and less sore than most cases of scarlet fever of the severity of her attack. Since then a more and more favorable attitude toward tonsillectomy and adenoidectomy has developed and this paper is an analysis of all cases operated on at the South Department in the past five years. One must appreciate that these patients are very prone to complications throughout the course of their disease, and even if the operation is favorable in general that some complication may occur following it. It is, moreover, difficult to determine whether the tendency to complication is greater or less after operation, as the operative cases are particularly selected because of factors which favor complications in this group as against the control groups.

SCARLET FEVER.

122 cases of scarlet fever were operated. The ages were as follows:

Years	Cases	Years	Cases
½-1	2	8	9
2	9	9	6
3	18	10	4
4	16	11-15	13
5	16	16-20	2
6	13	21-25	4
7	10		

The time in scarlet fever at which operation was performed was as follows:

Time of Disease	Cases	No. developing complication after operation (excluding contagious diseases)
2nd day	2	0
3rd "	7	2
4th "	3	0
5th "	1	0
6th "	3	0
7th "	1	0
2nd week	5	0
3rd "	4	1
4th "	15	3
5th "	12	3
6th "	11	4
7th "	9	2
8th "	9	1
9th "	4	3
10th "	5	0
11th "	4	2
12th "	5	2
13th "	3	1
14th "	5	2
15th "	3	1
16th "	3	1
17-24th "	8	0

The complications of scarlet fever in this group preceding operation were:

	Cases		Cases
Otitis media	46	Arthritis	5
Rhinitis	40	Mastoiditis	5
Septic sore throat	21	Bronchopneumonia	4
Cervical adenitis	15	Measles	4
Periodic fever not accounted for unless by tonsils	7	Diphtheria	3
		Peritonsillitis	3
		Pertussis	3
Endocarditis	2	Pyelitis	1
Bronchitis	2	Impetigo	1
Tonsillitis, secondary	2	Corneal ulcer	1
Sc. fever reinfection	2	Pleural effusion	1
Nephritis	2	Pericarditis	1
Parotitis	2	Persistent tonsillitis	1
Catarrhal jaundice	2	T. B. of adenoid	1
Burn	1		

No complications were present in 23 or 18.8% but of these 11 were operated on in the early or acute stage. There was a previous history of frequent sore throats in 26 cases, adenitis in 3 and otitis media in 3.

The complications following operation were as follows:

	Cases		Cases
Transient fever	13	Broncho-pneumonia (after measles)	1
Rise in pulse rate	9	Broncho-pneumonia	1
Otitis media	7	Infection of jaw	1
Haemorrhage	5	Retropharyngeal abscess	1
Measles	3	Septic sore throat	1
Cervical adenitis	2	Antrum abscess	1
Mumps	2		

There were no complications after operation in 90 or 73.7%.

Analysis of the complications occurring after operation shows the following:

Temperature rise after operation:

Duration	Cases	Highest points	Av. Highest temp.
1 day	4	100.5-103	101.1
2 "	4	100-102.5	101
3 "	4	100.5-103	101.3
7 "	1	102	

In the case having fever for 7 days there had been a similar fever for one week preceding operation.

These cases were operated from the 6th to the 15th week of scarlet fever. The acute cases are not included.

Pulse rise.

Duration	Cases	Highest Rate
1 day	1	168
2 "	2	125
3 "	3	130
4 "	2	130
2 wks.	1	130

Post-operative haemorrhage. Post-operative haemorrhage was moderate in two cases and slight in three, occurring 14, 16 and 23 hours after operation. It was not alarming and was readily controlled. These cases were operated in the 4th, 6th, 7th and 12th weeks of scarlet fever.

Operative haemorrhage was not abnormal.

Otitis Media. Otitis media occurred for the first time after operation in four cases as follows:—

4th day in one case lasting 5 weeks.
5th day in one case lasting 2 days — red drum without discharge.
13th day in one case lasting 9 days.
24th day in one case lasting 10 days.

Otitis media occurred following operation in cases which had had otitis media during the acute stage of scarlet fever as follows:

12th day, persisting one week.
10th day, persisting for one week in a case which had had otitis media at onset, persisting 6 weeks.
8th week after operation, persisting 2 weeks.

The patients developing otitis media for the first time after operation were operated on the 4th, 7th and 5th week and the third day respectively.

Broncho-pneumonia. One patient developed broncho-pneumonia 40 days after operation on the 5th day of measles. The lung was clear in 10 days.

One patient, age 1, who had been returned to hospital because of a contagious nasal discharge developed broncho-pneumonia 19 days after a favorable post-operative convalescence and died on the 31st day. These cases were operated on the 3rd day and 9th week of scarlet fever respectively.

Local Sepsis. One patient developed a septic process in throat and nose beginning 14 days after operation with swelling and redness of throat and nasal discharge for a period of one week. He was operated on the third day, when he had a severe septic throat with extensive membrane and tonsils nearly meeting in median line. He later developed measles and broncho-pneumonia.

One case operated in the 5th week developed adenitis on the 5th day with a small abscess opened on the 12th day with rapid recovery.

One case operated on in the 5th week had small glands in neck one week after operation for a few days.

A swelling of jaw developed in another case the day after operation, clearing in 2 weeks.

In one case which had been running an irregular temperature for one week before operation with slight glandular swelling, nasal discharge and swollen tonsils, a retropharyngeal abscess developed and was opened on the 6th day after tonsillectomy.

One case developed nasal discharge at end of one week and later was operated for antrum. There was a history of frequent nasal discharge previous to scarlet fever.

Reinfection. One patient developed a typical scarlet fever 3 days after tonsillectomy which had been done in the 6th week while the patient was still desquamating from the first attack. The temperature lasted 3 days, reaching 103.2, and there were no complications.

Nephritis. One patient was operated on the 3rd day of nephritis in the 4th week of scarlet fever. There was an increase of albumen on day of operation and an increase of blood cells for 5 days. The urine was normal in 4 weeks. There was no oedema. The urine showed V. S. T. to T. of albumen with hyaline, granular, brown granular and epithelial casts, renal cells and red blood corpuscles and was smoky in color for a few days.

On examining the table on page 6 it is seen that complications occurred more frequently in cases operated late in convalescence than when operated earlier, although this may be due to differences in the cases. It does not indicate the supposedly great danger of tonsillectomy early in the disease, however. It must be recalled that the cases in this group represent chiefly cases in which complications without operation particularly threatened.

Purpose of operation and results. Many of these cases were operated because of continued contagiousness as shown by aural or nasal discharge.

Aural Discharge. Thirty-four cases operated, all but 5 cleared within 6 weeks.

Ear discharge stopped in 4 days. 4 cases
Ear discharge stopped in 8 days. 11 cases
Ear discharge stopped in 10 days. 5 cases
Ear discharge stopped in 14 days. 3 cases
Ear discharge stopped in 4 wks., 5 cases
Ear discharge stopped in 6 wks., 1 case
No benefit 5 cases

Nasal Discharge. Thirty-nine cases were operated because of nasal discharge.

Nasal discharge ceased in 1 wk., 6 cases
Nasal discharge ceased in 2 wks., 18 cases
Nasal discharge ceased in 3 wks., 5 cases
Nasal discharge ceased in 4 wks., 2 cases
Nasal discharge ceased in 8 wks., 1 case
No benefit 7 cases

Three patients were operated because of cervical adenitis, with rapid subsidence of glands in all.

Others were operated because of peritonsillar abscess, frequent sore throats, obstruction, dyspnœa, difficult deglutition, poor general condition, persisting infection in tonsils or adenoids, etc.

In the *acute stage* of the disease tonsillectomy was performed in 18 cases. In two cases complications occurred in convalescence.

In one case, No. 63068, age 4 years, there was a history of sore throat frequently and very many colds. There has been an abscess of the neck and the patient was a mouth breather. The tonsils were very large, nearly occluding fauces, and there was nasal obstruction. Operation on the 3rd day of scarlet fever. On the 9th day there was a nasal discharge, which continued for a long period. The antrum was opened several months later. In the other case, No. 62808, 3 years old, the patient was operated in the third day of scarlet fever, at which time there was a moderate septic throat with patches of membrane on each tonsil. Fourteen days after operation, fever, swelling of the throat, and within a week, nasal discharge. Three weeks after operation aural infection occurred. By the end of the 4th week throat, nose and ears had cleared. On the 35th day measles developed, followed by pneumonia on the 5th day, and an active otitis media. Within 10 days lungs and ears had cleared.

As tonsillectomy in the acute stage of scarlet fever is unusual, the detail of these cases is given in the accompanying table.

Reference number	Age	Day of disease operated	Condition	Course
60970	14	2nd	Frequent sore throats. Large red tonsils with marked crypts, some exudate on post pharynx and slight oedema of uvula. Mod. mild case. T. 100.	Temp. normal in two days. Throat healed in 10 days. No complications.
60792	5	6th	Marked swelling of tonsils, left to median line, right to ½ cm. from median line.	Temp. normal in one day. No complications.
60862	9	3rd	Tonsils much enlarged, marked crypts with exudate. Mod. mild case. T. 100.5.	Temp. normal in 3 days. Throat healed in 3 wks. No complications.
65101	10	3rd	Right tonsil buried. Left tonsil mod. enlarged, exudate on surface. Mod. case. T. 101.5.	Temp. normal in 2 days. Throat healed in 3 wks. No complications.
65086	10	4th	Tonsils much enlarged. Thin membrane on surfaces. Glands at angle of jaw much enlarged. Tonsils exuded pus on pressure. T. 103.	Temp. normal in 24 hrs. Throat healed in 3 wks. No complications.
65130	2	3rd	Tonsils enlarged. Pus exuded on pressure. Very large adenoid mass.	Temp. normal in 3 days. Throat healed in 4 wks. No complications.
65387	6	4th	Tonsils markedly enlarged, exudate on each and on uvula. Mod. case with septic throat. T.	Temp. normal in one day. Throat healed in 11 days. No complications.
65817	4½	6th	Catches cold easily, mouth breather and is said to be mentally backward. Tonsils meet in median line. T. 100.5.	Temp. normal in 3 days. Throat healed in 2 wks. No complications.
66446	14	6th	Several attacks of tonsillitis. Tonsils mod. enlarged. Exudate in crypts. Moderate case. T. 102.	Temp. normal in one day. Throat healed in 2 wks. No complications.
60904	5	3rd	Tonsils large, ragged, marked crypts. T. 102.	Temp. normal in one day. Throat healed in 3 wks. No complications.
61748	19	5th	Tonsils moderately enlarged. Mild case. Temp. normal.	Temp. normal. Throat healed in 4 wks. No complications.
65104	6	2nd	Had had otitis media, and present illness began with earache and red drums. Tonsils mod. enlarged, covered with exudate.	Temp. normal in 2 days. Throat healed in 3½ wks. No complications.
63417	4	8th	Always had large tonsils, and has occasional sore throats. Tonsils large, meet in median line, some exudate. Breathing through mouth, which is noisy and somewhat difficult.	Throat healed in 2 wks. No complications.
65120	5	3rd	Recurrent tonsillitis. Tonsils large and almost meet in median line. Yellow exudate over surface.	Temp. normal in 2 days. Throat healed in one wk. No complications.
65626	7	7th	Frequent tonsillitis. Tonsils large with marked crypts. T. 103.	Temp. normal in 2 days. Throat healed in 2 wks. No complications.
66142	6	4th	Tonsils markedly enlarged. Almost meet in median line. Thin film of membrane over surfaces.	Temp. normal in 2 days. Throat healed in 12 days. No complications.
63068	4	3rd	Many colds and sore throats. Abscess of the neck. Mouth breather. Tonsils very large, nearly occlude throat, and covered with film of exudate. T. 100.8. Glands at angle of jaw.	Temp. normal in 3 days. Nasal discharge on 9th day continued thru convalescence. Rt. antrum opened 15th wk. No fever during convalescence.
62808	3	3rd	Tonsillitis 2½ years before. Tonsils much enlarged, almost meeting. Patchy membrane on left, slight on right. T. 102.8.	Temp. normal in 3 days. 14 days after operation throat red—fever. During next week swelling of throat, nasal discharge, etc., with high fever. Third week aural discharge. Fourth week throat clear, aural and nasal discharge cease. 35 days after operation measles. 40 days after operation pneumonia, and again discharge from ears. 45 days after, lung clear and ears clear.

DIPHTHERIA.

In diphtheria, diphtheria carriers, septic sore throat, tonsillitis, chorea, etc., tonsillectomy has been performed 74 times during the past five years.

In the diphtheria carriers 39 cases were operated upon because of the carrier condition. Of these, 36, or 92.3%, were cured within four weeks; 32, or 82%, were well in two weeks.

Diph. free	Cases	Per cent.
Within 1 week	16	41
Within 2 weeks	16	41
Within 3 weeks	2	5.1
Within 4 weeks	2	5.1

Three patients were not benefited by operation. All proved to be non-virulent and were discharged.

The details of these cases is given in the accompanying table.

These cases were selected from the diphtheria carriers as being favorable for operation by culturing various regions as each tonsil, pharyngeal wall, and nostrils. The tonsillar carriers were operated on. Occasionally other than tonsillar carriers were included.

DIPHTHERIA CARRIERS.

Case	Reference Number	Age	Week of Disease Operated	Cultures Before Operation	Cultures After Operation
1	61333	29	8th	21 consec. cultures. 10 positive.	Immediately after operation 7 consec. negative cultures.
2	61405	8	4th	7 consec. pos. cult.	One wk. after operation. 7 consec. neg. cultures.
3	60938	5	?	Several positive.	All cult. neg. for a month.
4	60853	4½	4th	11 consec pos. cult.	Next 23 cult., 5 neg. One month later 6 consec. neg. cultures.
5	61559	9	7th	35 cult. 31 positive.	After operation, 10 cult., 8 neg. All neg. after 10 days.
6	54155	25	2nd	13 cult. 8 positive.	No effect. Non-virulent. 52 cult., 36 neg.
7	64664	21	7th	24 cult. 11 positive.	One wk. after operation, 12 cult., 11 neg.
8	64556	8	11th	18 cult. 16 positive.	11 cult., 7 neg.; 12 days after operation. 7 consec. neg. cult.
9	65128	7	6th	19 cult. 10 positive.	6 days after operation. 6 consec. neg. cult.
10	65187	5	4th	11 cult. 10 positive.	One week after, 6 cult., 5 neg.
11	65328	7	5th	15 cult. 5 positive.	One wk. after, 7 consec. neg.
12	65316	11	7th	25 cult. 17 positive.	One wk. after, 14 cult., 13 neg. All neg. after 11 days.
13	65522	4	4th	13 cult. 9 positive.	15 cult. 13 neg.
14	65501	3½	7th	14 cult. 10 positive.	Nine days after, 6 consec. neg. cultures.
15	65640	19	3rd	0 cult. 8 positive.	Nine days after, 6 consec. neg. cultures.
16	65828	24	3rd	12 cult. 11 positive.	Ten days after, 7 consec. neg.
17	65889	5	4th	15 cult. 13 positive.	Eight days after, 12 cult., 11 neg.
18	65920	5	8th	23 cult. 18 positive.	34 cult., 20 pos. No benefit, nonvirulent.
19	66108	2½	5th	17 cult. 16 positive.	Five days after, 5 consec. neg.

Case	Reference Number	Age	Week of Disease Operated	Cultures Before Operation	Cultures After Operation
20	66101	6	10th	35 cult. 18 positive.	Ten days after, 9 cult., 8 neg.
21	66178	3	5th	16 cult. 15 positive.	Six days after, 7 consec. neg.
22	66451	10½	3rd	18 cult. 14 positive.	After op., 20 cult., 11 neg.;! 27 days after, 7 consec. neg.
23	61213	17	9th	50 cult. 34 positive.	2 days after, 7 cult., 6 neg.
24	61160	4	3rd	13 cult. 7 positive.	3 days after, 17 cult., 9 neg.; all neg. in 3 weeks.
25	60724	26	3rd	7 cult. 6 positive.	2 days after, 13 cult., 8 neg.; after 10 days, all neg.
26	60464	26	4th	21 cult. 17 positive.	3 days after, 10 cult., 6 neg.; all neg. after 9 days.
27	62003	25	4th	17 cult. 14 positive.	2 days after, 3 consec. neg.
28	62519	20	3rd	9 cult. 7 positive.	2 days after, 11 cult., 8 neg.; all neg. after 7 days.
29	63528	14	8th	10 cult. 8 positive.	10 days after, 12 cult., 9 neg.; after 2 weeks all neg.
30	63907	22	2nd	8 cult. 4 positive.	One week after, all neg.
31	63736	2	8th	20 cult. 16 positive	One week after, 4 cult., 3 neg.
32	63707	7	4th	14 cult. 7 positive.	Five days after, 5 consec. neg.
33	63786	4	9th	30 cult. 21 positive.	Seven days after, 26 cult., 20 neg. All neg. after 2 weeks.
34	63686	4	6th	15 cult. 14 positive.	Six cult., all pos., non-virulent.
35	63620	22	3rd	5 cult. All positive.	One week after, 10 cult., 8 neg. All neg. after 8 days.
36	60238	7	7th	Cult. positive for one month.	One week after op., neg. cult. for 13 consec. days.
37	59915	?	3rd	7 cult. 2 positive.	Three days after, neg. for 9 consec. days.
38	58602	21	4th	8 cult. 7 positive.	One week after, cult. neg. for 6 consec. days.
39	61440	12	4th	19 cult. 14 positive.	Three days after op., 6 consec. neg. cult.

The complications in this group were as follows:—

Fever transient	8 cases
Rise in pulse	4 "
Mumps	1 case
Erysipelas of face	1 "
Diphtheria of wound (?)	1 "
Hemorrhage	1 "
Bronchopneumonia	1 "
Cervical adenitis	1 "

The bronchopneumonia occurred in a two year old child operated in the eighth week after a normal convalescence; pneumonia developed on the tenth day and was fatal in one day. During the third week of convalescence, one patient had had a cervical adenitis and abscess.

One case had tuberculosis of tonsils and adenoids.

The operative procedures were nearly uniform in these cases. Light ether anaesthesia with the open method was used. The sitting posture was used nearly exclusively. The dissection of the tonsils was done with Monahan's blunt dissector and snare, chiefly, a method which produces but little trauma and gives excellent results.

I feel that the technique is especially important in these cases, that the ether should be light, the trauma as little as possible, and the operation as short as possible.

CONCLUSIONS.

1. Tonsillectomy and adenoidectomy are valuable means of shortening the contagiousness of scarlet fever and diphtheria in suitable cases.
2. There is reason to believe that early operation in scarlet fever tends to reduce the danger of complications.
3. Operative dangers are not great; haemorrhage is not more marked than in other conditions.
4. Local infection, although not excluded by operation, is less common than usually occurs in non-operative cases.
5. Bronchopneumonia occurred three times in 196 cases, once being after measles, but in no case did symptoms appear earlier than ten days after operation.

DISCUSSION.

Dr. C. R. C. Borden, Brookline: According to his usual wont, Dr. Place has been very modest concerning the outcome of his investigations. Did time but permit, it would give me pleasure to tell you of a great many brilliant results which have been obtained in the South Department during his administration.

As regards the subject under discussion, he has left very little for me to add, since my experience in the removal of tonsils during scarlet fever has in recent years been comparatively slight. Doubtless I performed some of the operations which he mentioned as not being particularly successful, but that was some time ago, before the operation had reached its present state of development.

When I became connected with the Aural Department of the Boston City Hospital, chronic discharge from the middle ear was the bane of our existence. We had dozens of such cases every day, whereas at the present time there are relatively few.

The wholesale removal of adenoids and tonsils in hospitals and in private practice is the most prominent factor in the diminishing number of cases of otitis media.

I was delighted to hear Dr. Place say that a number of tonsils operated during scarlet fever cured acute otitis media. If every case of aural discharge persisting more than two or three weeks should have the tonsils and adenoids removed, deafness and mastoiditis in the future would be relatively rare. Even at the present time the patients coming to specialists' offices for relief from deafness are gradually becoming fewer and fewer, and in the large cities there will probably be comparatively little of it in the future.

Another point brought out by Doctor Place I wish particularly to emphasize, namely, the recognition and diagnosis of profuse nasal discharge. Such a discharge as that often seen in scarlet fever is frequently the beginning of nasal sinus disease, which is so troublesome later in life. As nasal sinus disease is much more common than the profession at large realizes, it is our duty to bring about a better understanding of the significance of its far-reaching influence. It is a powerful factor, in many cases of asthma, cough, arthritis, indigestion, and probably heart and kidney infections of various degrees and intensity.

Inflamed tonsils and adenoids are often the primary source of infection of the nasal sinuses. Consequently the removal of infected lymphoid tissue will bring about marked improvement throughout the mucous surfaces of the nose.

Once or twice a year, I am called upon to see some desperately sick child in which no cause can be found for prostration and high temperature. I should like to mention one case seen in consultation with Dr. Place and Dr. Hastings in the Brookline Contagious Hospital, since it illustrates very well three particular points which I wish to emphasize. A young girl seven years old was admitted to the hospital a few months ago with a very light case of scarlet fever. Several weeks later she became very ill and developed a high temperature, but physical examination by Dr. Place and Dr. Hastings failed to discover any particular reason for her condition. I was then invited to see the case, and found nothing except a shiny, pink ear-drum. There was little or no bulging of the drum; there was a partial light reflex present; there was no swelling of the canal wall and no tenderness or swelling over the mastoid. Incision of the drum was not followed by discharge or by any cessation of the symptoms. The child continued to be very ill; finally, because nothing definite elsewhere could be determined, Dr. Place and Dr. Hastings allowed me to open the mastoid, which, in the absence of any other symptoms, I was convinced was the real cause of her troubles. When the mastoid cortex was exposed, the first blow from the hammer and the chisel uncovered a cavity in the mastoid which occupied its whole interior. When the rest of the bone was taken from the cortex, the mastoid cavity was found to be very red and dry. There was practically no bleeding, and it required very little operating to enter the mastoid antrum and find this direct communication to the middle ear. Some bleeding occurred at this point, but very little. There were one or two very suspicious cells behind the jugular vein, which was freely exposed. The mastoid had all the appearance of being tubercular, but unfortunately no cultures were taken and no pieces of bone were saved for examination.

Shortly after the operation the temperature fell to normal and never went up again except once temporarily, which was probably due to some disturbance in the digestive tract. The child recovered slowly, because of her extreme prostration, but finally left the hospital in good condition. As previously stated, this case emphasizes three points. First, the parents took the child to their family doctor some months before and asked if it were necessary to have the tonsils and adenoids removed. The doctor advised against it, and told them to wait until she was older. Doubtless, had her tonsils and adenoids been removed at that time, her serious illness would not have occurred. Secondly, there were few symptoms pointing to mastoiditis; but had we waited for the cardinal symptoms as given by text-books and lectures on the subject, I am sure this child would have died. Thirdly, I am positive that this particular case would have become one of chronic mastoiditis were it not for the effective results obtained from a two and one-half per cent. solution of mercurochrome. In all my experience with mastoiditis, coincident with scarlet fever, I have never seen a case better suited to become chronic than this was, because of the peculiar tubercular-like appearance of the bone. After the first dressing was taken down, this wound was filled with the mercurochrome solution, which was allowed to remain in place for half an hour, five times a day.

Later, the number of applications was decreased. The wound healed rapidly and cleanly; today it is healed, and the hearing is normal. Not only did the wound heal, but the stitches used to draw the skin together at the top and bottom of the wound held in place, without infection or without cutting through, for more than seven days. This is the only case in my experience where I have been able to make sutures hold in scarlet fever. In every other case they have cut through, or become infected within three days.

When the adenoids were removed in this case the greater part of the lymphoid mass was removed with a Gottstein curette; but when the finger was inserted behind the palate, the sides of the pharynx and the spaces round the eustachian tube were so filled with remaining adenoid tissue that the finger experienced the same sensation as if it had been inserted into a tub of soft butter. The tissue, of course, was curetted away by the finger nail.

Primary mastoiditis practically never occurs. In a large series of autopsies in the Contagious Department of the Boston City Hospital, if I remember rightly, but one instance occurred in which the question of primary mastoiditis was raised. In every other case it was secondary to the ear, nose, or throat.

Such being the case, it becomes our duty in every case of a scarlet-fever middle-ear complication to anticipate the more serious developments of mastoiditis, and to remove infections in the nose or throat before the middle-ear condition has become sufficient to be a serious menace to the patient's life or to the future of his hearing.

Dr. Place, of the Boston City Hospital, Dr. Hastings, of the Brookline Contagious Hospital, and Dr. Morse of the Somerville Contagious Hospital, realize this to its full extent, and are constantly watching their patients lest they develop chronic middle-ears, mastoiditis, jugular thrombosis, meningitis, and so forth.

Dr. Place's paper today will, I am sure, spread broadcast this most important subject, and I feel confident it will do much to banish the fear held by so many physicians and specialists—viz., that scarlet fever, in the present or in the past, does not contraindicate the removal of infected tonsils and adenoids.

Dr. E. H. Place, Boston (closing): I might speak about the case that Dr. Borden spoke of. I quite agree that the operation did a great deal of good. I don't know what would have happened if he had not done it. I saw the girl after he did and found nothing to account for the temperature except the ear. He opened the ear without getting pus, and she showed no mastoid symptoms at all. The only local infection in that case was a mastoid which was apparently primary. The only cases of mastoiditis I have seen which were primary were tuberculous. One of my cases had five operations on the mastoid and recovered, but I think she has pulmonary tuberculosis now.

SPECIAL NOTICE

The Boston Medical Library, permanent headquarters of The Massachusetts Medical Society, 8 The Fenway, Boston, desires contributions of books, periodicals, pamphlets, medical photographs and autographs, and whatever relates to medicine. Do not throw away or sell for junk anything of a medical or scientific nature, no matter how worthless it may seem, without first giving the Library the privilege of examination.

Original Article.

AN INVESTIGATION OF THE RELIABILITY OF LABORATORY TESTS AND A DISCUSSION OF TECHNIQUE OF LABORATORIES IN AND NEAR BOSTON.

By Francis H. Slack, M.D., Brookline, Mass.

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Instructor in Public Health Laboratory Methods, Massachusetts Institute of Technology.

FOREWORD BY DR. WM. C. WOODWARD, FORMERLY HEALTH COMMISSIONER, BOSTON, MASS.

In May, 1919, the writer was impressed with the importance of determining the accuracy of diagnostic and other work done in the bacteriological laboratories in and about Boston. He had no reason to believe that conditions here were different from conditions in other places, but Metropolitan Boston is made up of so many independent cities and towns and contains so many clinical laboratories, public and private, in which bacteriological work is done, that the situation obtruded itself more forcibly, probably, than it would have done in other places. Action was taken toward the desired end by arranging for coöperation between the responsible directors of two bacteriological laboratories of unquestionable standing, with the hope that if coöperation between these two could be effected, then coöperation on the broader scale would follow. The plan was unsuccessful, however, the work consuming too large a part of the time of the directors of the laboratories participating in it.

Foiled in efforts along the line named, the writer appealed for aid to Professor William T. Sedgwick, then professor of biology and public health at the Massachusetts Institute of Technology. Professor Sedgwick cheerfully consented to direct the inquiry and to furnish the necessary technical assistance, but could not provide the money. An appeal was made to the Committee of the Permanent Charity Fund, Inc., who, upon being convinced of the importance of the objects to be obtained and of the fact that money was not available from other sources, made the necessary grant. The reasons submitted to the Committee of the Permanent Charity Fund in the appeal that was made for assistance seemed to represent a complete justification for the expenditure and were as follows:

“In the interest of the public the Health Department of the City of Boston, through its bacteriological laboratory, is continuously making examinations to determine whether persons from whom specimens are submitted by their attending physicians are or are not suffering from a communicable disease, to determine the nature and extent of the bacteriological contamination of milk, etc.

"It is manifestly of vital importance to the community and to the patient that the results of such examinations as are made to determine the presence or absence of communicable diseases be as nearly accurate as human care, knowledge, and skill can make them. To report that a smear from a case that a physician suspects of being a case of gonorrhoea shows that the case is that disease may create suspicions that no subsequent discovery of error and no amount of subsequent explaining can remove, and may wreck the happiness of a family. To report that a similar specimen shows no evidence of gonorrhoea when the question of marriage hangs on the decision may, if an error be made, ruin the health of the young wife and bring blindness to the offspring. Similarly the welfare of the individual and the safety of the community are inextricably bound up in the reports of the laboratory as to whether given cases are or are not syphilis, or tuberculosis, or diphtheria, or typhoid fever, or cerebro-spinal fever, or malarial fever, and so on.

"In the case of examinations made in connection with the efforts of the department to insure the wholesomeness of the milk supply, the safety of swimming pools, and so on, errors may lead to a false sense of security on the one hand, with consequent disaster, and on the other hand may lead to unnecessary expenditure of money, energy and time in efforts to right evils that do not exist."

The history and results of the investigation are fully set forth in the following report. Technical recommendations for the standardization and control of laboratory service, which are chiefly of interest to those engaged in laboratory work, are presented in a separate article for those interested in the purely laboratory aspects of the situation. To the administrative health officer and, above all, to the people, the matter of primary concern is not so much the standardization of procedure as the establishment of some method of supervision and control whereby laboratory errors and misinterpretation of laboratory reports will be reduced to a minimum.

It would seem clear that if physicians, pharmacists, dentists, veterinarians, and even chiropodists are required to satisfy the state of their fitness to follow their chosen callings before they are permitted to do so, then that persons who venture to presume that they are capable of doing clinical laboratory work should be tested in like manner before they begin to hold themselves out to the public, either in governmental or private laboratories, as qualified to do so; and some assurance should be required in every case that the laboratory equipment possessed by the would-be laboratory worker is adequate for the purposes for which he uses it. Possibly some such method of control, by requiring a license as a condition precedent to engaging in laboratory work as a means of livelihood, might be tolerated, for the present at least, inasmuch as that is the method of control applicable to the other callings named above. It would seem better even in such cases, however, and it would certainly seem necessary with respect to all governmental laboratories, that there be some adequate system of measuring the accuracy of their work from time to time and requiring that work to be up to standard. A peddler must produce scales of the required fineness before he can begin crying his wares, but, furthermore, he must have those scales tested from time to time to see that they retain their accuracy. So the public is entitled to demand that workers—at least in government laboratories—not only are qualified when they enter upon laboratory service but that they remain qualified during their entire period of service and that they do not fail through carelessness or rush of work to exercise their qualifications for the safeguarding of patrons of their laboratories.

To the end last named, there should certainly be established some system of measuring—of auditing, if you will—the accuracy of the reports issued from government laboratories. Such a system of checking up the work of these laboratories would not be difficult, provided only that money be provided for the employment of competent men for such work, with authority to use such measures as they saw fit for determining the accuracy of the results of any laboratory. Such work may well be entrusted to state medical licensing boards, or to state health authorities, but in the latter case, provision would have to be made for determining by some independent agency the accuracy of the work of the laboratories maintained by the state health authorities, which are certainly no more immune from error than are the laboratories in the municipal health departments. Possibly, after all, the establishment of an independent board for such supervisory work might best solve the problem.

Certainly, no fair-minded laboratory worker could object to such a system of supervision as is suggested above. It is just such a system of supervision as the most responsible financial interests of the country are by law subjected to, and such supervision as the financial departments of all large corporations expect from their stockholders and directors. If the work of the laboratory is above criticism, then an inquiry into it, such as is now proposed, will do the laboratory no harm and will tend to reassure the public and, particularly, the medical profession with respect to its work. If the work of the laboratory can be improved, then such supervision should show the way. Clearly it would be the part of wisdom on the part of state and municipal governments to provide such money as may be necessary, and to grant such authority as may be necessary, for the effective supervision and control of the laboratories established and maintained by them for the benefit of their citizens.

I cannot close without recording my appreciation of the valuable service rendered by Professor W. T. Sedgwick, Professor S. C. Prescott, Dr. L. S. Medalia, and Dr. F. H. Slack, and of the spirit of willing coöperation manifested by the several laboratories that were asked to coöperate in the investigation. I am under deep obligation, too, to the Committee of the Permanent Charity Fund, Incorporated, for the financial assistance rendered by it, without which the investigation would have been impossible. The investigation has, I feel, been well worth while, and it should point a way toward better laboratory organization and administration not only in Boston but wherever public health laboratories for the service of the community are maintained.

A COMPARISON OF REPORTS FROM SEVERAL DIAGNOSTIC LABORATORIES ON FOUR COMMON TESTS: DIPHTHERIA, TUBERCULOSIS, TYPHOID FEVER, GONORRHOEA.

Part I.

This report is a result of the initiative of Dr. Wm. C. Woodward, formerly Commissioner of Health for the City of Boston, through whom the Committee of the Permanent Charity Fund, Incorporated, became responsible for a study of the technique of various laboratories in or near Boston, a comparison of the work done, through the submitting of identical samples and an affort to establish uniform procedure.

The late Prof. W. T. Sedgwick of the Massachusetts Institute of Technology was asked by Dr. Woodward to oversee this study and to assign workers from the Biology Department to prosecute it under his supervision. Under his direction Professor S. C. Prescott sent a circular letter to the various laboratories in March, 1920, and received a cordial response to his request for coöperation.

About June 1, 1920, Dr. L. S. Medalia took charge of the investigation and for several months devoted much of his time to a visitation of the laboratories and a study of the methods and technique of each.

On his request typewritten copies of the technique in use were submitted from the Boston Health Department laboratory, the State Health Department diagnostic laboratory, the State Wassermann laboratory and from the Board of Health laboratories in Brookline, Cambridge and Somerville.

Dr. Medalia drew up charts comparing the technique in use in these and other laboratories for the diagnosis of diphtheria, tuberculosis and typhoid fever. He also called several meetings of laboratory directors for a discussion of the technique used in these tests.

In May, 1921, owing to the pressure of other work, Dr. Medalia felt obliged to drop this investigation, and the writer was asked to continue it.

Following the programme outlined for the work, this was done by submitting various series of specimens to the laboratories for diagnosis, a comparison of the reports and repeated conferences of the workers for discussion of technique. As an outcome of the discussion a code of minimum standards has been accepted.

The writer acknowledges with appreciation the hearty coöperation of the following laboratories in carrying out these tests, including, besides those mentioned in this paper, Wassermann tests and examination of milk: Boston Biochemical Laboratories, Boston City Hospital Pathological Laboratory, Boston Dispensary Laboratories, Boston Health Department Bacteriological Laboratory, Boston Health Department Bureau of Milk Inspection, Brockton Health Department Laboratories, Brookline Health Department Laboratory, Cambridge Health Department Laboratory, Homeopathic Hospital Pathological Laboratory, Massachusetts General Hospital Pathological Laboratory, Massachusetts State Department of Health Bacteriological Laboratory, Massachusetts State Department of Health Wassermann Laboratory, Newton Health Department Laboratory, Newton Hospital Laboratory, Peter Bent Brigham Hospital Pathological Laboratory, Wellesley Health Department Laboratory.

DIPHTHERIA.

Through the courtesy of Dr. E. H. Place of the Boston City Hospital, South Department, the first series of diphtheria cultures was taken from patients and attendants there. Ten cultures were taken. The swabs in each case were then rubbed thoroughly over the surface of as many tubes of blood serum media as there were laboratories taking part, and to make sure of a thorough inoculation the process was repeated. The last serum in each case, which presumably received the least material, went to Laboratory No. 7. All the serums were delivered to the various laboratories on the same day.

The results of this first series of tests were rather disappointing, evidently where the bacilli were few, as in Nos. 1 and 3, they were either overgrown or overlooked in over 50 per cent. of the cultures.

Brief histories of these ten cases follow:

Case No. 1. No. 64724. Age five years. Admitted April 15, 1921. *Diagnosis:* Clinical nasal diphtheria. *P. E.:* Bilateral muco-purulent discharge from nose with crusting. No membrane seen. Positive culture from nose and throat at entrance. *Course:* Received antitoxin at entrance. Uneventful course till May 21, when adenoids were removed. Throughout convalescence positive cultures were obtained until June 10, when gentian treatment was used for one week and then omitted for one week, subsequent to which all cultures from nose and throat were negative. Virulence test not done. *Diagnosis:* Nasal diphtheria.

DIPHTHERIA TESTS—TABLE I.

Cultures Taken May 11, 1921.

	Specimens.									
Lab.	1	2	3	4	5	6	7	8	9	10
1	—	—	—	—	+	—	+	+	+	—
2	—	—	—	c*	+	+	—	+	+	—
3	+	—	—	—	+	+	—	+	+	—
4	—	—	—	c	+	+	Susp.	+	+	—
5	—	—	—	c	+	—	—	—	+	+
6	+	—	+Few	—	+	+Few	+	+	+	—
7	—Susp.	—	+Few	c	+	+	+	+	+	—
8	—?	—	—?	c	+	+	+	—?	+	—
9	—??	—	—?	c	—?	—?	+?	—	+???	—
10	—?	—	—?	c	+	+?	+	—?	+	—
11	+	—	+	—	+	+	+	+	+	—
12	—	—	—	—	+	—	+	+	+	—

*c=contaminated.

Case No. 2. No. 64755. Age six years. Admitted May 11, 1921. *Diagnosis:* Typical mild faucial diphtheria. Positive cultures from the nose and throat. Received antitoxin at entrance. *Course:* Uneventful convalescence. Was discharged well at the end of three weeks. Discharge cultures all negative. *Diagnosis:* Faucial diphtheria.

Case No. 3. No. 64734. Age eight years. Admitted April 18, 1921. *Diagnosis:* Typical clinical faucial diphtheria, moderate. Positive culture from throat. Received antitoxin at entrance. *Course:* Uneventful convalescence, with discharge in twenty-four days. All discharge cultures negative. *Diagnosis:* Faucial diphtheria.

Case No. 4. No. 64859. Age six years. Admitted May 7, 1921. *Diagnosis:* Faucial diphtheria. Severe toxaemia. Entrance cultures positive. Forty thousand units antitoxin given at entrance intravenously. History not obtained. Duration of illness not known. *Course:* There was considerable difficulty in breathing due to oro-pharyngeal obstruction, which was relieved by passing a nasal tube. There was a slight febrile disturbance due to antitoxin, with temperature returning to normal in twelve hours. Death followed on fifth day in hospital. *Diagnosis:* Faucial diphtheria.

Case No. 5. No. 64873. Age twenty-one years. Admitted May 10, 1921. *Diagnosis:* Mild faucial diphtheria. Positive culture from throat. Received antitoxin at entrance. *Course:* Uneventful. Discharged in eighteen days. All release cultures negative.

Case No. 6. No. 64688. Age seven years. Admitted April 11, 1921. *Diagnosis:* Mild nasal diphtheria? *Course:* No membrane in nose. Entrance cultures negative three successive days from nose and throat separately Antitoxin given at entrance. Uneventful course till placed on release cultures April 26. From 26th of April to 4th of May all release cultures were negative, but patient did not go home. From that date on, positive cultures were noted almost constantly. From May 15 to 23 gentian treatment was given. From May 28 cultures were again positive persistently from the nose and occasionally from the throat. Adenoidectomy June 3. Cultures from June 8 to 15 positive from nose and throat. Virulence test proved organism was non-virulent. *Discharge:* Patient discharged well July 16, 1921. *Diagnosis:* Nasal diphtheria.

Case No. 7. No. 64435. Age eight years. Admitted March 4, 1921. *Diagnosis:* Mild faucial diphtheria. Positive culture from throat at entrance. Antitoxin given. *Course:* Uneventful save for otitis media. Release cultures from nose, throat and ears were negative March 17 to 21 and patient was discharged March 22. After discharge one positive culture from nose and throat returned. Patient was readmitted March 24, No. 64556, with positive culture from the nose. No antitoxin given, no Schick done. Uneventful course save for almost continuous positive cultures. Gentian treatment in April followed by positive cultures again. Regional cultures showed nose alone involved. June 3 tonsils and adenoids removed; following day had a moderately bad post-nasal hemorrhage. Cultures resumed June 10; positive till the 15th; negative through the 21st. Discharged 22d of June well. *Diagnosis:* Faucial diphtheria, tonsils and adenoids.

Case No. 8. No. 64847. Age twelve years. Admitted May 6, 1921. *Diagnosis:* Severe faucial diphtheria. *P. E.* Patient admitted with severe faucial diphtheria with oedema of soft palate and considerable membrane. Antitoxin given at entrance. *Course:* Cultures from throat and nose, suspicious for several days, became definitely positive fourth day after entrance. Course uncomplicated save for slight evidence of kidney inflammation. Definite palatal paralysis, also knee jerks. Release cultures begun June 24 were all negative. Discharged well June 30, 1921. *Diagnosis:* Faucial diphtheria.

Case No. 9. No. 64664. Age twenty-one years. Admitted May 9, 1921. *Diagnosis:* Streptococcus sore throat. Patient admitted with streptococcus sore throat of moderate severity. Cultures from nose and throat separately negative. Received antitoxin at entrance. *Course:* Moderate serum reaction. Out of bed April 29. Uneventful course save for occasional positive cultures among discharge cultures from April 23 to May 14, when the regional cultures showed tonsils and posterior pharynx alone involved. Then came T. and A. May 21. with resumption of cultures May 28. From May 28 to June 8 all cultures for release except the one on June 1 were negative. Patient discharged well June 9. *Diagnosis:* Streptococcus sore throat. Tonsils and adenoids removed. Bacteriological diphtheria.

Case No. 10. No. 64855. Age four years. Admitted May 7, 1921. *Diagnosis:* Measles. *Course:* Entrance culture from nose positive. No antitoxin given. Schick negative. Uneventful convalescence. Release cultures from May 9 to 17 all negative. *Discharge:* Patient discharged well May 15, 1921. *Diagnosis:* Measles.

As indicated in the histories, many of these were release cultures, and on this account more difficult for examination. Most of the errors consisted in passing as negative cultures containing but few bacilli. Laboratory No. 5 reports a positive result on culture 10, which all others report negative. Laboratory No. 9 seems over-cautious.

In preparing the material for the second series of diphtheria tests the duplicate smears were made in each case from a single culture, the growth having been first emulsified in salt solution. These smears, dried on glass slides, were submitted to the laboratories, each of which was allowed to stain the specimens in its own way.

DIPHTHERIA TESTS—TABLE II.

Lab.	Specimens. 1	2	3	4	5
1	+	—	—	—	?
2	+	—	—	—	—
3	—	—	—	—	+
4	+	—	—	—	+
5	—?	—	—	—	+
6	+	—	—	—	?+
7	+	—	—	—	+
8	+	—	—	—	?
9	+ Few	—	—	—	+
10	No answer received				
11	+	—	—	—	—

Cultures Nos. 1 and 5 were positive, the others negative. All agree on the negatives, and, again, the chief error is in reporting as negative smears containing diphtheria bacilli.

It is interesting to note that while each laboratory reported one or the other of these cultures, 1 and 5, as positive, only three give a positive report on both.

One laboratory did not answer at all, and a troublesome feature in all these tests was the slow progress because of delay in sending reports.

The writer realizes that these tests on diphtheria are too few for a basis for comment, and is planning another series of tests in which the same stained smears will be submitted to all laboratories, thus eliminating discrepancies due to varying cultural conditions or to methods of preparation of the specimens.

It seems evident that positive cultures, containing few bacilli, are apt to be reported negative, especially by the smaller laboratories. Larger laboratories have many advantages which tend to give them greater accuracy. In the first place, the handling of numerous cultures daily keeps the technician in good training, and, secondly, the larger staff allows for the examination of each specimen by at least two observers.

TUBERCULOSIS.

Only one series of specimens has been submitted, and these were smeared and fixed on glass slides, each laboratory doing its own staining.

SPUTUM EXAMINATION FOR T.B.

Lab.	1	2	3	4
1	+	—	—	+
2	+	—	—	+
3	+	—	—	+
4	+	—	—	+
5	+	—	—	+
6	+	—	—	+
7	+	—	—	+
8	+	—	—	—
9	+	—	—	+ Few
10	Did not answer			
11	+	—	—	+

Only one mistake is noted here: a case of overlooking the bacilli when they are few. This is the chief error to be expected in this examination.

TYPHOID FEVER.

For this test specimens of dried blood were submitted, the positives from a guinea pig which had been immunized, the negatives from a nonimmune pig. Specimens 1, 2 and 5 were negative.

The specimens were submitted in July.

WIDAL TESTS.

Lab.	1	2	3	4	5	
1	—	—	+	+	—	Reported Sept. 8
2	—	—	+	+	—	Reported in July
3	—	—?	+	+	—	Reported in July
4	—	—	+	+	—	Reported in July
5	—	—	+?	+?	—	Reported in July
6	+	—	+?	+	—	Reported Sept. 17
7	No report received					

The principal criticism here is in the delay of the reports. One negative specimen was reported as positive by Laboratory No. 6.

GONORRHOEA.

Four smears were submitted to each laboratory, being prepared through the kindness of Dr. Hinton of the Boston Dispensary from four patients, two with positive and two with negative discharges.

GONORRHOEA TESTS.

Lab.	1	2	3	4
1	—	—	+	+
2	—	—	+	+
3	—	—	+	+
4	—	—	+	+
5	—	—	+	+
6	—	+	+	+
7	—	—	+	+
8	—	—	+	+
9	—	—	+	+
10	—	—	+	+
11	—	?	+	+
12	—	—	+	+

One of the negative smears was reported positive by one laboratory and suspicious by another. One great difficulty in gonorrhoea diagnosis is with the proper control of the gram stain. Unless considerable care is used one may decolorize too much, causing gram-positive organisms to appear as gram-negative; or one may decolorize too little, causing gram-negative organisms to appear as gram-positive.

Since one laboratory reported this difficulty overcome by use of Burke's staining method, the formula for this method will, at the request of the other laboratories, be included in the report on technique.

Of these four examinations diphtheria is undoubtedly the most difficult, and the results in the other three series (tuberculosis, typhoid fever and gonorrhoea) are fairly uniform. With diphtheria, however, the discrepancies are very noticeable, and this in spite of the fact that the various workers knew their results were to be compared with those obtained by others.

Since all the diphtheria cultures, with the exception of sets for two laboratories*, were planted on tubes from the same batch of media, and all were delivered to the laboratories within a few hours, it would seem that the cultures should be uniform, yet in one case reported positive by the writer a smear from a duplicate culture was brought to him which showed no diphtheria bacilli.

Probably cultures for diagnosis would have given better results, since the bacilli are apt to be more numerous and of better morphology.

One cannot but feel, however, that diphtheria bacilli have been overlooked in some of these cultures and that some of the technicians need toning up on this examination.

Possibly a frequent comparison of duplicate cultures with other laboratories, or occasional revision of diphtheria slides, staining methods and diagnoses by an expert diagnostician, would be of advantage in establishing a higher precision in diphtheria examinations.

(To be continued.)

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*One of these laboratories preferred to reinoculate from the cultures submitted to its own media; the other made its own cultures from the swabs.

Current Literature Department.

ABSTRACTORS.

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TREATMENT OF HUMAN HOOKWORM WITH CARBON TETRACHLORIDE.

NICHOLLS AND HAMPTON (*Brit. Med. Jour.*, July 1, 1922) present the following conclusions as a result of their investigations of treatment of human hookworm infection with carbon tetrachloride:

1. Carbon tetrachloride is an efficient anthelmintic remedy for hookworms.

2. The drug may be administered safely in doses of 10 to 20 minims to children of 3 and 4 years of age, even when they are seriously ill from various causes.

3. It aids the expulsion of *Ascaris lumbricoides* if it is followed by a purgative, but it is not as effective as chenopodium in killing this worm.

4. The drug does not seriously deteriorate on keeping. Many children were given doses of carbon tetrachloride which had been stored in the laboratory for three years.

5. It is more valuable than a chenopodium for campaigns against hookworm disease because—

(a) Patients do not object to its taste.

(b) It is not necessary to precede or follow the administration of it by a purge.

(c) It is more efficient than chenopodium and has not the depressing effects of that drug.

(d) It is much cheaper than any other drug that has been used.

(e) It can be prepared in a high degree of purity, and a chemically pure preparation should always be used.

(f) The person who is being treated can do his usual day's work.

Children when one year of age may be given 10 minims of carbon tetrachloride with safety, and this dose should be increased by 2 minims for each year of apparent age. Thus a child of 10 would receive 28 minims, a youth of 16, 40 minims (2½ c.cm.), and an adult dose should be from 50 to 80 minims (3 to 5 c.cm.), according to the size of the patient.

Finally, chenopodium is soluble in carbon tetrachloride, and a mixture of one part of the former in four of the latter should prove to be efficient for the expulsion of *Ascaris lumbricoides*.

[J. B. H.]

Malignant Disease and Leukemia.

Young (*Edin. Med. Jour.*, June, 1922) presents the results of a further investigation into the etiology of malignant disease and leukemia, including an account of lymphoma and lympho-sarcoma experimentally produced in the mouse.

He believes these investigations provide data in support of the contention that the leukaemic phenomena and lympho-sarcoma are related to one another in regard to their ultimate etiology, and that these states are, on etiological grounds, related to ordinary malignant disease.

[J. B. H.]

Jejunal Ulcer without Previous Gastro-Enterostomy.

Richardson (*Surg., Gyn. and Obstet.*, July, 1922) presents a very thorough and interesting paper on this rather obscure subject. He reports one personal case, one from the records of the Massachusetts General Hospital, and nine cases reported from the literature. He then discusses the probable causes of primary ulcer of the jejunum and states that no sharp line can be drawn between these simple ulcers of the jejunum, which somewhat resemble peptic ulcer of the stomach and duodenum, and similar ulcers occurring lower in the small intestine. Whether these represent a clinical entity or are merely the odds and ends of pathological processes cannot be definitely asserted. No definite etiology can be assigned to them. Since syphilis produces a form of intestinal ulceration which affects the jejunum more readily than the ilium and also has a tendency to cicatricial contraction and perforation, it must be considered a possible cause of ulceration in some of these cases, although definite confirmatory evidence is generally lacking. Two points are of particular importance in future cases: a careful microscopic study of the lesions, including if possible the mesenteric lymph nodes, and a determination of the presence or absence of syphilis.

[E. H. R.]

Mega-Sigmoid, Mego-Rectum, Fecal Bolus.

Gordon (*Surg., Gyn. and Obstet.*, July, 1922) reports at length upon these conditions, discussing profusely etiology, prognosis, diagnosis and treatment, the latter of which is distinctly operative; medical treatment entirely failing to relieve either the condition or the symptoms.

[E. H. R.]

Recurrent Dislocation of the Patella.

McAusland and Sargent (*Surg., Gyn. and Obstet.*, July, 1922) report 16 cases of recurrent dislocation of the patella, with a new type of operation for correction of the difficulty. The operation consists in splitting the patella tendon and transplanting its bony insertion in a more lateral position on the tibia. The operation sounds useful and practical.

[E. H. R.]

The Surgical Treatment of Uterine Prolapse. End Result in Thirty Cases.

Hundley, J. M., and Hundley, J. M., Jr (*Ann. of Surgery*, July, 1922) write as follows.

1. The interposition operation gives better results than any other operation we have used in the extreme cases of uterine prolapse.

2. Of the thirty cases there has been no return of the procidentia. In one the rectocele returned. She reported that she was sufficiently comfortable, and did not wish to be operated on again.

3. A small percentage of the patients complain of some bearing down and discomfort in the bladder after doing a hard day's work.

4. In cases with marked eversion of the vaginal walls, associated with complete uterine prolapse, a cure can be effected by plicating the cul-de-sac of Douglas, and anchoring it to the posterior wall of the cervix, together with shortening of the utero-sacral ligaments.

[E. H. R.]

History in Tuberculosis.

H. C. Parsons (*Canad. M. A. J.*, Vol. xii, No. 4) reports that cases of congenital tuberculosis do occur, but are very rare. Huss accepting forty cases in man, Warthin and Cowie accepting only five. Such children die shortly after birth. There is as yet no satisfactory proof of inherited predisposition. In looking up the family history one should inquire as to the state of health, past and present, of all the family, also of any other permanent or temporary dwellers in the house; in other words, the whole household, especially as to symptoms referable to the respiratory system; even of other families in other than single houses. The personal history should include an enquiry, especially as to 1. Haemoptysis; *i. e.*, a dram or more of blood, as it occurs in from 60 per cent. to 80 per cent. of cases of pulmonary tuberculosis, while tuberculosis is the cause of haemoptysis in from 85 per cent. to 90 per cent. of cases. Osler pointed out that haemoptysis may precede by months any other symptom of pulmonary tuberculosis. 2. Pleurisy; Eichhorst has demonstrated tubercle bacilli in 62 per cent. of cases of "idiopathic" pleurisy; from 30 per cent. to 40 per cent. of such cases are variously reported as eventually developing tuberculosis. 3. Unexplained fever; tuberculosis is the most common cause both in children and adults. In children, a history of recurring fever and vomiting with no evident cause is a common picture in mediastinal tuberculosis. 4. Cervical adenitis; this may be due to other causes, but the resultant scars are useful in helping to establish the diagnosis. 6. Coughs and colds are important if constantly repeated. 7. Loss of weight and fatigue, not only present but past as well.

[A. W. C.]

The Treatment of So-Called Sciatica.

J. A. Nutter (*Canad. M. A. J.*, Vol. xii., No. 5) discusses sciatica and states that it is in the majority of cases a manifestation of referred pain, and not a neuritis: pain referred from some diseased or injured neighboring joints of the spine or lower extremities, in the following order: lumbar spine, sacro-iliac, and hip; other occasional sources of referred pain are: diseases of the uterus and adnexa, posterior urethra and prostate, pelvic inflammations, stone in the kidney, pyriformis irritation due to flat foot, inflammatory conditions of the lower abdomen, as appendicitis.

In the lumbar spine the greatest offender is gouty arthritis, Pott's disease, traumatic conditions, also syphilitic arthritis, typhoid spine and scoliosis being other causes.

In the sacroiliac joint any factor constantly disturbing the body equilibrium will tend in time to cause a chronic strain or relaxation of this joint, such as a pronated foot, the weight of a pregnant uterus, a pendulous abdomen, a short leg or a stiff hip.

In the hip, causes of referred pain in the sciatic nerve are non-tuberculous arthritis, arrested hip disease, all sorts of hip traumatisms.

In regard to treatment, when once the exact cause of the referred pain is recognized, the appropriate treatment is at once indicated.

[A. W. C.]

The Cause, Symptoms, and Diagnosis of Nasal Sinusitis in Their Relation to General Practice.

W. S. Hunt (*Canadian M. A. J.*, Vol. xii, No. 7) describes the anatomy of the sinuses, then states that normally the sinuses are sterile even when much infected matter is breathed, until some constitutional disease or obstruction or an attack of influenza cause an infection of their mucosae to occur, leading to long continued trouble. Another cause of infection in the antrum is an infected tooth in close contact with or perforating its floor. Infection of the sinuses is unusual before the age of puberty because the frontal and sphenoid remain undeveloped until the sixth or eighth year. It may, however, complicate scarlet fever, measles, and diphtheria, and should always be suspected in cases of obscure pyrexia. The persistence of a nasal discharge after removal of tonsils and adenoids should always lead to suspicion of sinus involvement, especially if more profuse from one side of the nose. The purulent discharge may work back and reach the larynx, causing a chronic laryngitis and bronchitis, or it may leave through the anterior nares and cause occasionally recurrent facial erysipelas. Acute sinusitis is usually accompanied by headache, tenderness, discharge, and changes in the nasal mucous membrane. The headache is usually a prominent symptom, aggravated by stooping, by alcohol and tobacco, not by reading; has usually a definite periodicity. The discharge is at first watery, soon thick and yellow, may be blown out in great quantity from the nose, but often flows into the nasopharynx, where it may cause an acute ostitis or pharyngitis, the latter often mistaken by the patient for tonsillitis. Acute exacerbations resemble simple acute attacks, except that there is likely to be some chronic obstruction in the intervals, excessive nasal discharge, frequent colds, headaches or dizzy spells or ringing in the ears.

There are two forms of non-suppurative sinusitis. One is called vacuum sinusitis and is caused by absorption of the air when the osteum is closed, and is frequent in the frontal sinus and accompanied by severe supraorbital headaches, increased by reading, and associated with tenderness on pressure over the pulley of the superior oblique muscle. The second form affects the ethmoids and sphenoids, is of unknown origin, is very insidious in onset, and may lead to serious results through involvement of the optic nerve. The most frequent symptom is an intractable neuralgia of the trigeminal nerve. Constitutional symptoms are usually mild; in long-standing cases a general run-down condition is frequent, with anaemia and loss of weight and inability to concentrate; or arthritis, recurrent iritis, optic atrophy, and blindness may occur. Orbital cellulitis and fatal meningitis have resulted from sinusitis.

[A. W. C.]

The Medical Care of Post-Operative Abdominal Cases.

R. D. Rudolph (*Canad. M. A. J.*, Vol. xii, No. 7) pleads for closer co-operation of the surgeon with the medical man in the care of post-operative cases. He approves of washing out the stomach before the patient regains consciousness, though this does not help a great deal, as there is still considerable anaesthetic left in the blood. He approves of giving but very little food during the first twenty-four hours, then adding to the diet gradually. If the stomach does not quiet down soon, over 800 calories in 1500 cc. of water can be given in the form of monosaccharides, alcohol, simplest amino-acids, and salts. He quotes two such formulas which he has found useful. In regard to management of the bowels, reasoning from some original experimental work in culturing the blood before and after the giving of cathartics and finding positive cultures in 30 per cent. after, while none had been positive before, he advises holding off giving cathartics except after the careful consideration of a medical man. Enemata are less objectionable and mineral oil still less.

In regard to pain, if the surgeon cannot remove the cause, then morphia should be given, not codein, and not combined with atropin, as there is already frequently a distressing dryness of the mouth and throat. Slight thirst may be relieved by washing the mouth with warm alkaline solutions, or by chewing gum. Water may have to be given by rectum, subcutaneously, or intravenously, avoiding acute oedema of the lungs by the last method. Nausea and vomiting may be due to several causes; if due to the anaesthetic, free drinking of warm water with consequent washing of the stomach may be sufficient, lavage may be needed, or cocain gr. ¼ with or without mxxv of 1/1000 adrenalin solution; if from acute dilatation of the stomach, a rare condition, lavage and pituitrin ½-1 cc. is of value; if of the toxic type, channels of elimination should be flushed, and glucose and soda solutions given subcutaneously or intravenously. The neurotic type is helped with large doses of bromides or with chloral and bromides by rectum. The stomach tube often has powerful psychic influence. Hiccough is best helped by atropin hypodermically or by chloratone by mouth. Tympanites may yield to hot applications and turpentine enemata, or molasses and milk enemata. Large doses of digitalis by rectum act in some obscure way to prevent or cure this condition, also to lessen the respiratory complications. Pituitrin or adrenalin may help, but must be used with caution as they raise blood pressure and may overstrain a flabby heart.

[A. W. C.]

Eye Conditions in Pregnancy.

Charles Graef (*Canad. M. A. J.*, Vol. xii, No. 7) describes both the common and rare eye conditions occurring in pregnancy; of these, the more important are the following: the eyelids may be strikingly pigmented. Styes are common during the early months and again during lactation. There may occur phlyctenular disease, and failure of accommodation may occur from weakness of some of the eye muscles, causing headache, diplopia, etc.; also frequently paresis of the ciliary muscles occurs, often suddenly, most commonly during early lactation, with consequent very troublesome blurring. The emotional influences of pregnancy and labor may be manifested by various eye symptoms, such as an exaggerated discomfort on using the eyes, photophobia, narrowing of the visual fields, and occasionally absolute blindness, all with no evidence of ocular disease. Non-syphilitic iritis may precede labor. Eye conditions associated with albuminuria form the most serious problem, occurring at any period, but most commonly late; the most important are affections of the optic nerve and retina and the visual changes due to intracranial lesions. Often there is oedema of the lower lids when no oedema occurs elsewhere in the body, but permanent oedema occurs here only when the ankles, legs, and serous cavities are involved. A detailed account of the ophthalmoscopic findings is given. As to prognosis, sight is most impaired when the optic nerve is affected; slight evidence of disease in the retina and nerve head with markedly affected vision leads to a poor prognosis, probably due to haemorrhages into the nerve trunk with resultant permanent damage. Uraemic blindness or amblyopia occurs as a part of the uraemia, develops rapidly, and the ophthalmoscopic appearances are negative even in cases of complete blindness. The pupil in purely uraemic cases is usually dilated, but may be contracted, but the light reflex is retained. The loss of the light reflex points to pathology in the optic nerve or primary optic ganglia. The blindness in uraemia is due to oedema or circulatory disturbances in the optical cortex of the occipital lobes. The author quotes an obstetrician as advising prompt emptying of the uterus in cases of albuminuric retinitis that is getting worse in spite of treatment, while the ocular complications of eclampsia, unless the case is one due to chronic nephritis associated with pregnancy, do not call for this interference.

[A. W. C.]

The Value of Neurological Examination in Syphilis.

R. Hoyt (*A. J. Syphilis*, Vol. vi., No. 2) advises most careful neurological examination of syphilitic and suspected syphilitic cases, because it is well recognized that active neurosyphilis in an insidious form may be present in any case in which the diagnosis of syphilis has been established, and that many forms of the disease which are controllable at first, later become uncontrollable. To detect neurosyphilis during its early or formative stages, a complete neurological and serological examination is essential, because the disease process may occur in any part of the nervous system and thus produce any symptom, functional or biochemical. As it is not so much the disease itself as it is the part of the nervous system involved that determines the seriousness and course, the following is suggested as comprising a complete neurological examination.

1. An objective examination of all functions of sensibility (both general and special), followed by an inquiry as to present and past subjective sensory disturbances.
2. An objective examination of the various forms of motility (both of the appendicular musculature, and of the musculature of such special mechanisms as the eyes, jaws, face, tongue, pharynx and head), followed by an inquiry as to present subjective motor disturbances.
3. Inquiry and examination as to the functional status of the involuntary mechanisms, the vasomotor, gastrointestinal, genitourinary, and secretory systems.
4. An objective examination of the special functions of the cerebral cortex (stereognosis, speech, praxis, etc.), and an inquiry as to such organic disturbances as convulsions, loss of consciousness, etc., and as to such psychic disturbances as are characteristic of the neuroses, psychoses, and borderline states.
5. An objective examination of the kinesthetic function, namely, the reaction of the nervous system to labyrinthine stimulation as induced by rotary movement.

By employing this method of examination as a routine, many cases of hitherto unsuspected cases of neurosyphilis are revealed, some with symptoms characteristic of the disease, but more with symptoms not characteristic but consistent with syphilis, the true connection with syphilis being made by the spinal fluid examination. This neurological examination should be made at intervals during the course of the disease; the author considers such repeated examinations as imperative.

[A. W. C.]

Comparative Clinical Observations on Involvement of the Nervous System in Various Phases of Syphilis.

J. H. Stokes and A. R. McFarland (*Am. J. of Syphilis*, Vol. vi, No. 2) discuss a group of cases from the point of view of the central nervous system. Their conclusions are in brief as follows: in very early untreated secondary cases the proportion of positive findings may reach 60 per cent. to 70 per cent., falling to 40 per cent. within the first six months, and to 25 per cent. to 30 per cent. after the first year or two. Treatment of these cases within the first year, if intensive, causes a rapid and marked response in many cases; this is the most hopeful time for improvement. The first serological sign of involvement is a rise in cell count, which should best be regarded in doubtful cases as syphilitic, though it might be due to other conditions; the next is globulin content; finally the positive Wassermann reaction. Since symptoms and signs are to be regarded as late manifestations and since there is no parallelism between early symptoms and spinal fluid findings, spinal puncture should be done routinely. Spinal puncture should not be done in early cases without a preliminary sterilization of the blood stream by one or two arsphenamin injections to prevent a possible transfer of organisms to the meninges, but a test early in the course of arsphenamin will give valuable aid, and should be done before substituting mercurial treatment for arsphenamin in the first course. Patients whose spinal fluid is normal at this time, usually continue so through all stages; about 40 per cent. to 50 per cent. are of this type. This proportion can be increased by 50 per cent. to 75 per cent. further by effective treatment during the first two years of the disease; this is, then, the vital period of the disease from the therapeutic standpoint. A proportion varying from 5 per cent. to 8 per cent. in early, and from 14 per cent. to 41 per cent. in late syphilis will present negative Wassermann reactions on the blood and abnormal spinal fluids. As the syphilitic infection progresses from the early to the late stages, neurosyphilitic changes assume increasing importance. To a surprising degree, neurosyphilis complicates or underlies the internal medical aspects of the disease. In its detection, the examination of the spinal fluid may exceed any other procedure in diagnostic importance and proportion of positive results. In the diagnostic work of the Mayo Cinic a proportion of only 45 per cent. to 50 per cent. positive Wassermann reactions on the blood as compared with 60 per cent. to 70 per cent. positive reactions on the spinal fluid of syphilitics seems to be the rule.

[A. W. C.]

Lipoma of the Tendon Sheaths.

Strauss, A. (*Surgery, Gynecology and Obstetrics*, August, 1922), reports as follows:

This condition is a rare disease, as shown by the fact that there are only eighteen cases reported in the literature. There are two distinct types,—lipoma arborescens and lipoma simplex. Clinically, they may be considered together because the symptoms, signs, locations, treatment, and prognosis are practically the same. In fact, preoperatively, they have seldom been distinguished.

The etiology is unknown. Some authors have tried to attribute these growths to a former tuberculous process, and Kummer concluded that they do not belong to the class of tumors but are the result of chronic inflammation. The author, however, believes that to argue that the formation of a fatty deposit is the end-result of an inflammatory process is not convincing, and believes that they are more liable to be the result of simple trauma or of unknown origin.

Lipomata of tendon sheaths are composed of fatty tissue without any evident capsule other than the tendon sheath itself, to which they are so intimately attached that the sheath must be sacrificed in removing the growth.

The author reports seventeen cases with operation and end-result.

[E. H. R.]

Some Experiences with the "Meltzer-Lyon" Test in Gall-Bladder Disease.

Cutler, E. C., and Newton, F. C. (*Surgery, Gynecology and Obstetrics*, August, 1922), make the following conclusions:

The "Meltzer-Lyon" test is based upon the application of the law of contrary innervation to the biliary system. There is no proof of this at present.

It is our opinion that the specimens of bile obtained are the result of syphonage.

The test cannot be depended upon for diagnostic purposes even when accurately performed.

[E. H. R.]

Hyperplasia of the Rudimentary Lymph Nodes of the Prostate.

Fukase, N. (*Surgery, Gynecology and Obstetrics*, August, 1922), draws the following interesting and seemingly practical conclusions from his work. It it believed that it has formerly been not understood that the region of the prostate gland was involved in such diseases as Hodgkin's, lympho-sarcoma, and leukemia.

Small, primitive, or rudimentary lymph nodes occur normally throughout the prostate in the form of very small aggregations of lymphocytes located beneath the glandular and duct epithelium, most marked toward the outlets of the ducts. They are analogous to the rudimentary lymph nodes found in other organs, such as the liver, kidneys, uterus, etc.

Hyperplasia of these rudimentary lymph nodes of the prostate occurs chiefly in chronic hyperplastic prostatitis and in primary carcinoma of the prostate. In both conditions, the hyperplasia is essentially an inflammtory one due to chronic infection, or irritation, and possesses the same significance that such hyperplasias have in other parts of the body.

In the absence of chronic inflammation, a hyperplasia of the primitive lymph nodes of the prostate occurs in the lymphatic constitution, and may be found also in other generalized diseases of the lymphoid system, as Hodgkin's disease, lymphocytoma, and leukemia.

In both the inflammatory and non-inflammatory hyperplasias well-developed germinal centers may be produced in the hyperplastic node. Other evidences of functional activity by these hyperplastic nodes are shown in the metastasis of pigment, tubercle bacilli, and carcinoma cells to them.

[E. H. R.]

Creatinuria and Glycosuria in Myasthenia Gravis.

Williams and Dyke (*Quarterly Journ. of Med.*, July, 1922) report observations on four cases of the above disease,—three women and one man. On a creatin-free diet they found creatin in the urine in all, in one case amounting to one-half gram in 24 hours. The addition of measured amounts of creatin to the diet resulted in the excretion of one-third to one-half of the added creatin in the urine. (Normally no creatin is excreted in the urine.) The creatin metabolism is therefore defective in this disease of the voluntary muscle. In two cases pieces of muscle were excised and analyzed for creatin, and amounts somewhat below the normal were found.

The occurrence of traces of sugar in the urine led the authors to investigate the sugar tolerance in three patients, in all of whom it was found to be diminished. It is interesting to note that, while all responded in a normal manner to the ingestion of 50 grams of glucose, the administration of 100 grams resulted in a marked rise of the blood sugar and in glycosuria. The administration of levulose, however, did not raise the blood sugar level, indicating that the liver function was normal in this respect.

The authors are inclined to explain the defective carbohydrate metabolism as due to deficient storage of sugar in the muscles, and to link it up with the abnormal metabolism of creatin.

[W. T.]

Lowered Basal Metabolism in Disorders of the Endocrine Glands.

H. G. Hill (*Quarterly Journ. of Med.*, July, 1922) makes a welcome contribution to endocrinology, for he reports facts instead of hypotheses.

He measured the basal metabolism by the Douglas bag method, using the DuBois standards and method of calculating surface area.

Five cases of hypopituitarism showed a marked lowering of the basal metabolism, while three of four cases of acromegaly showed an increase, likewise a case of dyspituitarism.

Of great interest are his observations on borderline cases with symptoms of overaction of the parasympathetic (autonomic) system. Thus six out of 20 cases of nocturnal enuresis showed definite lowering of the metabolism associated with minor physical signs suggestive of endocrine deficiency, and all were cured or much improved by thyroid extract.

In addition, six cases of lowered metabolism are reported, occurring in cases with symptoms of vagotonia, or increased irritability of the parasympathetic system, viz., intestinal colic, mucous colitis, asthma, attacks of profuse sweating, and fainting fits. Five of these were treated with thyroid extract with much benefit.

He attempts to explain these phenomena by the connection of the thyroid with the sympathetic system. It has been shown that stimulation of the sympathetic is equivalent to inhibition of the parasympathetic, and *vice versa*, so that a decrease of thyroid activity would be likely to result in increased irritability of the parasympathetic. In the case of enuresis, the same explanation would apply, for it is known that stimulation of the parasympathetic excites emptying of the bladder.

Twelve normal controls showed a slight increase in the basal metabolism, varying from + 4 to + 13 per cent. This makes his findings of lowered metabolism in disease still more worthy of credence.

[W. T.]

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ANOTHER LETTER FROM MR. NUNN.

Even at the risk of wearying our readers the Journal has given space to another communication by Mr. Henry D. Nunn. So far as his argument goes everybody would agree that the average person instinctively revolts at any surgical operation however trivial. The average person revolts at having a tooth extracted, but he suffers the annoyance for the benefit to be obtained. Any well-balanced individual would not submit to a hypodermic injection except under the expectation of benefit. Thousands upon thousands of persons revolt at having more serious operations performed but adopt the resources of surgery because the end justifies the means: so all of us would prefer to give up vaccination if we did not believe in its efficacy, but vaccination has been found to be potent in controlling smallpox, hence we use it for ourselves and for those under our control. According to modern conceptions, several diseases may be prevented through the creation of immunity and however the immunity is conferred we employ the means, provided the procedure has a minimum risk. We believe in requiring vaccination of those who participate in the benefits of school life, for without acquired immunity, smallpox would be a common disease exposing the multitude and laying a heavy economic burden on society.

When Mr. Nunn speaks of putrid matter he tries to carry the impression that vaccine is especially dangerous, whereas the vast majority of persons sooner or later through accidental means, are infected with more virulent germs than those found in vaccine without developing serious after-effects. Vaccine, as now prepared, seldom does more than develop a mild reaction. It is very likely that careful breeding of vaccine virus, through successive generations in the calf, develops a strain which is potent for protection but does no lasting damage to the human subject. The records of this State seem to prove this assertion.

But Mr. Nunn's heavy artillery consists of his comment on the suggestion of submitting children to contact with smallpox for the purpose of comparing the relative number of cases of smallpox among the vaccinated and the unvaccinated. He then branches off into a suggestion that there is a widely entertained suspicion that those engaged in medical research are none too respectful of fundamental human rights of inmates of orphanages, hospitals and asylums. Let Mr. Nunn cite examples of inhumanity on the part of physicians and the medical profession would be in the field as early as anyone to correct abuses. Men possessed of scientific minds have human instincts quite as well developed as any of our people and will go as far and endure as great sacrifices as any of the heroes of history who have surrendered life for the benefit of others. Medical men have not, in recent times, resorted to the experiment of submitting children to exposure of smallpox and they never will again. In the first place they do not need to, for exposure has occurred too often and the results observed.

The Medical Liberty League would do it through the elimination of the compulsory feature of the law, and if they can ever have their way they will do it, for they advocate the omission of compulsory vaccination and that means that large groups of school children would grow up unprotected and in the presence of smallpox would be infected. The history of smallpox shows that it spreads among those not protected by effective vaccination, and without the compulsory feature many would not secure protection, for it is the tendency of many people to make no provision for protection until the menace is demonstrated.

So much space has been given to this discussion that we must now close it. The subject will be before our legislature from time to time and we shall respectfully refer Mr. Nunn to that arena.

◆

THE SPAHLINGER TREATMENT FOR TUBERCULOSIS.

The Associated Press item in the Richmond *Times* reports that the British Red Cross has decided to purchase the vaccine treatment originated by Henry Spahlinger of Geneva, and the contract has been signed. A number of American patients are now under treatment.

In an editorial in the *Journal of Laboratory and Clinical Medicine*, the statement is made that the treatment "utilizes either or both of two therapeutic principles, depending on the nature of the infection." In acute cases passive immunization, with special immune sera, is employed, and in chronic afebrile cases, active immunization with special antigens is practiced.

After a somewhat detailed explanation of the theory and application of the sera employed, the following statement appears:

"The illustrative cases reported are eight in number and are characterized by some vagueness in description. This may be because the article is in the nature of a general summary. Nevertheless it is regrettable. Three roentgen plates are shown, but they are on three different patients, so that no comparison can be made."

If the decision of the British Red Cross is founded on a report of eight cases, one may question the quality of judgment exercised. If the claims made for this treatment are found to be sustained, the action will be approved. The medical profession, however, may be justified in watchful waiting for the present.

◆

THE RAT MENACE.

The Public Health Service and Massachusetts State Health Department are concerned in the possibility of plague extension to this country. Dr. Louis L. Williams of the U. S. Public Health Service, in association with H. C. Mosman of the Massachusetts State Department of Health, have made a study of our conditions. An analysis of the situation shows that there are sixteen municipalities in Massachusetts with water fronts used more or less for shipping. The docks along our water front are especially adapted to the propagation of rats, for the construction affords shelter and the food supply is abundant. Boston and its contiguous water fronts should, according to the minimum estimates, furnish about sixty thousand rats, Lynn over two thousand, Salem about four thousand, Beverly about three thousand, Danvers over one thousand, Peabody over one thousand, Newburyport over one thousand, Gloucester five thousand, New Bedford and Fairhaven about six thousand, Fall River about six thousand, Buzzards Bay over a thousand, Quincy over a thousand and Plymouth five thousand.

These places could be made to yield a catch of probably not less than one hundred thousand rats, but even then a campaign would have to be followed by rat proofing of the buildings and regular campaigns for extermination.

We are living under a false sense of security, because, up to the present time, no plague infected rats have been discovered on our coast-line, from Florida to Maine, and with the exception of Norway, this is the longest coast-line that has been free from plague. According to the expectation of experts, this favorable condition will not long exist.

The Massachusetts Legislature has not been inclined to regard the situation as sufficiently serious to warrant the expenditure of much money in the destruction and study of rats, although the facts were presented at the last session. The control of rodent infestation is quite well understood and should be presided over by experts. To all who are interested, the underlying facts and the recommendations may be found in Public Health Bulletin, No. 121, under date of May, 1922.

◆

DIPHTHERIA.

In the Public Health Reports for August 18, Dr. J. W. Schereschewsky presents a paper, revised by Dr. R. E. Dyer, on this disease. The treatise is concise, covers the whole problem involved in the etiology, pathology, clinical features and treatment of the disease.

If every medical student could be made to memorize every statement made in this article, the coming generation would be benefited to a great extent. Also, if every physician who may be likely to have to deal with the disease would supply himself with a few copies to be loaned to parents, the campaign for prevention would receive an impetus. Incidentally the propaganda of the anti-vivisectionists would have less hold on the public mind if the laity could be shown that the efficient use of antitoxin on the first day of the disease, practically reduces the mortality to zero. The only objection that the antis could bring forward is found in the frank statement that horse serum is not always well borne by a small number of susceptibles.

There is one danger, to a small percentage of the medical profession, involved in widespread information of this sort; for if a doctor should fail to make an early diagnosis, or to apply the remedy, it is conceivable that a suit for damages might result, and unless an adequate excuse could be given, a jury, furnished with the known facts, might render an unpleasant verdict.

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MEASLES.

According to W. C. Rucker, U. S. Public Health Service, about 10,000 children died of measles in this country last year. This does not include many deaths from the sequelae of measles such as broncho-pneumonia and tuberculosis. The occasional resulting eye and ear disabilities also add to the importance of this disease from a public health standpoint.

Epidemics usually increase in number with the progress of the school year. The greatest numbers of fatal cases occur in the period from two to five years of age. Contrary to the ideas of a generation ago, the transmission stage rarely extends beyond the febrile period. Testimony indicates that the infection may be carried by a third person and the possibility of second or even third attacks is recognized.

Since the disease is eminently contagious and children may be exposed during the coryza stage before the disease is recognized, parents can be of great assistance to public health officials if due care is exercised. Without this coöperation the boards of health are handicapped in dealing with this menace. The common indifference should give way to intelligent management of the early indications of coryza in childhood.

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THE LAWFUL POSSESSION OF HYPODERMIC SYRINGES.

A reputable and prominent practitioner in this state desires to place in the hands of a patient a hypodermic syringe for the purpose of administering a remedy which is not a narcotic drug. This remedy is a simple glandular product which has been recommended in the treatment of a disease. The Massachusetts law definitely prohibits the possession of a hypodermic syringe under the circumstances outlined above. The text of the law is as follows:

CHAPTER 94, GENERAL LAWS.

Section 209. No person, not being a physician, dentist or veterinarian registered under the laws of this commonwealth or of the state where he resides, wholesale druggist, manufacturing pharmacist, registered pharmacist, manufacturer of surgical instruments, official of any government having possession of the articles hereinafter mentioned by reason of his official duties, nurse acting under the direction of a physician, employee of an incorporated hospital acting under the direction of its superintendent or officer in immediate charge, or a carrier or messenger engaged in the transportation of such articles, shall have in his possession a hypodermic syringe, hypodermic needle, or any instrument adapted for the use of narcotic drugs by subcutaneous injection. No such syringe, needle or instrument shall be delivered or sold except to a registered pharmacist, physician, dentist, veterinarian, wholesale druggist, manufacturing pharmacist, a nurse upon the written order of a physician, or an employee of an incorporated hospital upon the written order of its superintendent or officer in immediate charge. A record shall be kept by the person selling such syringe, needle or instrument, which shall give the date of the sale, the name and address of the purchaser and a description of the instrument. This record shall at all times be open to inspection by the department of public health, the boards of registration in medicine, veterinary medicine, and pharmacy and the board of dental examiners, authorized agents of said department and boards, and police authorities and police officers of towns. Whoever violates any provision of this section shall be punished by a fine of not more than one hundred dollars or by imprisonment in a jail or house of correction for not more than six months, or both.

Any intelligent person could be taught to use a hypodermic syringe with safety, but under the law a medicine can only be administered subcutaneously by the doctor or a nurse. In some cases the circumstances of the patient call for economy, and if a remedy can be applied without undue expense, some patients should be relieved of the necessity of having it administered by a doctor or nurse.

At the time of the passage of the law relating to drug addiction, the syringe was not so generally employed in non-narcotic treatment as it is now, and is likely to be in the future, and at the legislative hearings no one suggested the possibility of subcutaneous medication other than applying to the narcotic drugs. If the treatment of some chronic constitutional diseases is to be subcutaneous medication, it may be wise to give the physician power to delegate the technical application to some person other than a nurse in some cases.

The Massachusetts law has imposed restrictions exceeding those found in the Harrison Act. Our Committee on Legislation may find it advisable to suggest some change.

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NEWS ITEMS.

Worcester District Medical Society.—The first regular meeting for the year 1922-1923 was held Wednesday, Sept. 13, 8.15 p. m., at the University Club Rooms, 377 Main street. Program: Classifying Our Cardiacs, Dr. G. M. Albee, Worcester; lantern slides of Electrocardiograms were shown.

The discussion was opened by Dr. S. A. Levine, Peter Bent Brigham Hospital, Boston.

Notes from the Berkshire District.—On August 31st the Berkshire District Medical Society held a very interesting and well-attended meeting at the Curtis Hotel in Lenox. The State president, Dr. Bartol, was with us, as was also Dr. Torr Wagner Harmer, who spoke on "Office Surgery," and was extremely interesting.

Dr. Henry Colt has recently returned from a vacation trip spent in Alaska.

Dr. B. W. Paddock is again at work, after being confined with illness for a few days.

Dr. and Mrs. Nathan Finkelstein have a new daughter.

Dr. J. A. Sullivan recently suffered the loss of his State Registration certificate. While he was out at dinner someone entered his office and carefully removed it from the frame and carried it away. Nothing has been heard from it since.

At the recent meeting of the Berkshire District Society the resolution offered by Dr. Croft of the Franklin District was rejected by a unanimous vote.

Appointment of Dr. George H. Bigelow.—Beginning August first, Dr. George H. Bigelow began work under his appointment as Director of the Cornell Clinic, First avenue and Twenty-seventh street, New York city.

Dr. Bigelow is the son of Dr. Enos H. Bigelow of Framingham.

Removal of Location of the F. H. Thomas Co.—On September 4th the F. H. Thomas Company of Boston announced their removal from their old location at 691 Boylston street to 208 Newbury street, near Exeter street, where they now occupy an entire four-story building containing over eleven thousand square feet.

Their new building will admirably accommodate their business, which had outgrown their old quarters. The first floor is devoted to the display and sale of surgical instruments, which are attractively arranged in classified groups, a sample of each item being displayed. Most of the medical supplies, together with medical books, are easily available on this floor, so that customers may be promptly served. The heavier hospital and physicians' office furniture, sterilizers, scales, etc., are located on the second floor. Part of the floor has been partitioned into three small rooms, which are equipped as typical doctors' offices for general and special practice. The front part of this floor is devoted to the display and demonstration of microscopes, microtomes, and other laboratory equipment. Their orthopedic department, including three large, well-lighted fitting rooms, together with an attractive and spacious waiting room, is placed on the third floor. Convenient to this is their work-shop, where special orthopedic apparatus is fabricated. Stock rooms occupy the remainder of the third floor. The general and private offices are on the fourth floor, which is well lighted by means of roof lights. Laboratories and sewing rooms occupy the rest of this floor, in which are manufactured the many products of the F. H. Thomas Company.

The building itself is thoroughly modern, served with an automatic elevator, and contains a large, high-studded basement, which is used for shipping and storage. It is conveniently located, scarcely three hundred feet from their old place of business.

The F. H. Thomas Company will continue to operate their branch store near the Harvard Medical School, where a full line of text books and supplies is carried for the convenience of the students and nurses in that district. On the top floor of their branch store is situated their instrument shop, where repair work and special instruments are made.

A cordial invitation has been extended by the F. H. Thomas Company to call on them and inspect their new quarters.

The Springfield Academy of Medicine.—The regular meeting was held Tuesday, Sept. 12, 1922, at 137½ State street, at 8.30 p.m. Dr. Channing Frothingham of Boston read a paper on "Heart Irregularities."

The list of speakers for the coming year includes Drs. Alexis Carrel, J. W. Williams, W. S. Thayer, and others of equal note.

Franklin District Medical Society.—The regular bi-monthly meeting was held at the Weldon, Greenfield, Tuesday, Sept. 12, 1922, at 11.15 a.m. Dr. E. H. Trowbridge of Worcester, Mass., read a paper on "Medical Ethics."

Dr. Wm. D. Wheeler has returned from his studies at New York hospitals, and resumed his practice at 360 Commonwealth avenue.

Bequests to Hospitals.—In the will of Arthur B. Emmons, late of Newport, it is provided that the Newport Hospital and the Children's Hospital of Boston are each to receive $25,000.

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Miscellany.

CONFERENCE OF TUBERCULOSIS AND PUBLIC HEALTH SOCIETIES.

A conference of the secretaries of Massachusetts tuberculosis and public health societies was called for Friday and Saturday, September 8-9, at Hotel Victoria, Boston, which was well attended by representatives of the city and county organizations. The main purpose of the meeting was not medical, but rather to organize the coming Christmas seal sale on a broader basis than heretofore. Mr. R. V. Spencer, Executive Secretary of the Massachusetts Tuberculosis League, was Chairman, and the sessions consisted of round table discussions instead of set papers. Mr. Basil G. Eaves, Campaign Secretary of the National Tuberculosis Association, spoke of the general needs of organization, while Mr. Ernest D. Easton, Executive Secretary of the New Jersey Tuberculosis Association, one which had had an unusually successful sale the past two years, outlined his methods. Miss Bernice W. Billings, Executive Secretary of the Boston Tuberculosis Association, told of the good work at the Prendergast Preventorium for Children, and noted the progress of the Modern Health Crusade, and the field nurses of the

League, and Miss M. Alice Gallagher, Executive Secretary of the Norfolk County Public Health Association, spoke of work in rural Massachusetts, in which a serious effort is under way to improve conditions. Dr. Edward O. Otis spoke of the distribution of tuberculosis. Mr. Spencer presented in his introductions of the successive speakers a deal of interesting information on ratios, variety of work, needs of different movements undertaken by the League, etc., and Mr. John Ritchie and Mr. Roscoe W. Vining discussed informally publicity methods and organization for the Christmas seal sales, respectively.

REPORT OF THE HAVERHILL BOARD OF HEALTH FOR 1921.

The conspicuous features outlined are as follows:

1. Lowest death rate in the history of the city, 12.17 per 1,000 of population.
2. Average of the 667 decedents, 47 years, 8 months, the maximum longevity for 42 years.
3. Increase in the average age of decedents from 30 years, 10 months in 1880, to 47 years, 8 months in 1921, a gain of 54 per cent.
4. Infant mortality rate of 1.56 per 1,000 of population with 86 decedents under 1 year of age.
5. One death from diarrhoea and enteritis of children under 2 years of age, with a rate of 1.82.
6. Only 114 deaths of children under 5 years of age, the percentage of 17.09 to total mortality being the lowest ever known.
7. Unusually low percentage of 5.71 for 68 decedents born during calendar year, as compared with births.
8. One death from typhoid fever with a rate of 1.82.
9. Smallest number of deaths from tuberculosis, 42, since that disease was made reportable.
10. Lowest death rate from preventable diseases, 1.40 per population, with 77 deaths.
11. Average age of 38 years, 6 months for decedents during the past 42 years, with an average death rate of 15.97 per 1,000 of population for that period.

The mortality rate of 12.67 is considered by the members of the Board most remarkable, confirming the belief that Haverhill people are becoming more and more interested in public health matters through our educational efforts, and are, in consequence, taking greater care of themselves and paying more attention to their health by frequent physical examination, thus prolonging their lives.

Haverhill, when the Board of Health was first created in 1880, had 350 deaths with population of 18,506, the rate that year being 18.02 and the average age of the 350 decedents being 30 years and 10 months.

The population of Haverhill, as estimated by the Federal and State Census bureaus for January 1, 1921, was 54,817.

This estimated population gives a rate of 12.17 per 1,000, the lowest death rate in the history of the city, with 667 deaths, exclusive of stillbirths, and a new high mark was attained last year in longevity, with the average age of the decedents 47 years and 8 months.

The highest death rate for Haverhill was 21.08 in 1886, when there were 481 deaths with a population of 22,818, the average age of decedents that year being 28 years, 9 months. Three years previously the average age of decedents was 26 years, 11 months, the lowest point ever reached.

A review and study of the mortality statistics as compiled by this Department, discloses that there have been 23,553 deaths since 1880, the yearly average being 560, this giving an average rate of 15.97 per 1,000 of population and the average age of decedents having been 38 years, 5 months.

It is interesting to point out in this connection that since 1900, when Health Departments were first changed from Committees on Nuisances to take up the advocacy of preventive medicine, the death rate has been less than 15 per 1,000 and in only one year, 1906, was the average age of decedents less than 40 years.

It is also most notable that while the population of Haverhill has almost trebled since the Board of Health was first established in 1880, the death rate has decreased about 33 per cent, while the span of life of those who have passed on has increased about 54 per cent.

The 1921 mortality statistics disclose that two-thirds of the 667 who died were over 40 years of age and of that number 185, or 27 per cent, of the total number of deaths, lived beyond threescore and ten. Another feature for 1921 was that 10 of the decedents were over 90 years of age, one of whom lacked a few months of becoming a centenarian.

It is singular that one-sixth of the deaths were children under 5 years of age and another sixth from 5 to 40 years, the 30-40 age group numbering 44, while in the infant mortality group of under one year, there were 86, 27 of whom lived less than a day.

The 114 children under five years, who died within the past 12 months, gave a percentage of 17.09 to total mortality, this being the lowest rate within the past 42 years. The decedents under 1 year numbered 86, with a rate of 1.56 per 1,000, and of that number 68 were born during the calendar year with a rate of 5.71 as compared with the total number of births.

Deaths from diarrhoea are generally regarded as the real index of infant mortality and we feel pleased in calling attention to the fact that during the past year there was only one death from that cause among the 96 children who passed away before they reached their second birthday, with a rate of 1.82, the lowest in the history of our city.

Haverhill was free from any unusual outbreak of diseases in the past year, the total number of deaths from preventable diseases having been 77, with 47 deaths from pneumonia, of which 28 were lobar, and 42 deaths from tuberculosis. This gave a rate of 1.40 per 1,000 of population, another record mark in the work of the Health Department.

The morbidity and mortality figures for the past two years, on reportable diseases, were:

	1921		1920	
	Reported	Deaths	Reported	Deaths
Chicken-pox	214		69	
Diphtheria	239	10	247	8
German measles	4		38	
Infection of eyes	8		24	
Measles	25		1,011	8
Mumps	112		155	
Scarlet fever	135	2	81	1
Tuberculosis	98	47	117	57
Typhoid fever	9	1	12	
Whooping cough	209	5	98	3
Anterior poliomyelitis	19	2	25	9
Lobar pneumonia	118	28	162	44
Cerebro-spinal-meningitis	2	2	3	2
Influenza	62	3	1,413	49
All other	32		3	
Total	1,286	101	3,469	181

The number of deaths from diphtheria as will be seen from the table, was unusually large, this fact being more clearly seen if reference is made to the table of deaths from that disease for many years past. The case history of the 10 decedents shows that five had complications of myocarditis and two were laryngeal, and these with the three others had been ill for from three to five days before the cases were reported.

This department has already arranged for the introduction of the Schick test, a harmless and simple test to determine susceptibles and immunes, and we hope to enlist the co-operation of parents so that within a short time, diphtheria will be reduced to a minimum, if not entirely wiped out, especially among school children and those of pre-school age.

This report is a model of concise and complete information of the health conditions and problems of Haverhill.

LEGISLATIVE MATTERS.

NATIONAL HEALTH LEGISLATION—REPORTED BY THE NATIONAL HEALTH COUNCIL.

The Tariff and Public Health. H. R. 7456. The Senate passed the tariff bill on August 19th. The bill has gone to conference, as the Senate made numerous changes, but it is expected that a conference report will be adopted about September 15th.

The Senate made notable changes in the tariff bill regarding synthetic medicinals and chemicals, about which much controversy has existed. While efforts to continue the embargo provisions of the present emergency law did not succeed, prohibitive duties were incorporated, which are regarded as equivalent to an embargo. It was asserted that the manufacture of synthetic drugs and medicinals from coal tar products in the United States during the war could not be continued against German competition, unless amply protected by tariff duty. Among the products in this category are, aspirin, novocaine, benzoic acid, phenol and many other similar coal tar products. Such articles will bear a tax of 75 per cent. ad valorem and an additional 10½ cents per pound when unfinished. They will be taxed 90 per cent. ad valorem and an additional 10½ cents in a finished state. The bill places a 25 per cent. duty upon chemicals, drugs and medicinals, whether dutiable or free, when they are imported in capsules, tablet or similar forms.

Defining Butter and Fixing a Standard for Butter. S. 3858. Favorably reported to the Senate by the Committee on Forestry and Agriculture, August 19, 1922, and placed on the Senate Calendar.

This bill describes butter as the food product usually known as butter, made exclusively from milk or cream, or both, with or without common salt and with or without coloring matter, and containing not less than 80 per centum, by weight, of milk fat.

MATTERS NOT PREVIOUSLY CONSIDERED.

The Coal Situation and Congress H. R. 12-472. Introduced by Representative Winslow, August 26, 1922. Favorably reported in the House by the Committee on Interstate and Foreign Commerce, August 29, 1922.

Since a shortage of coal this winter may develop into a serious health problem, we are including a résumé of the coal bill before Congress.

This legislation places the Federal control of coal prices and distribution of coal in the hands of a Federal Fuel Distributor, to be chosen by the President. The legislation sets out the fact that "A National emergency exists which endangers the public health and general welfare of the people of the United States."

It empowers the Federal Fuel Distributor to ascertain:

1. The available supply of coal and other fuel and the extent of threatened shortage:
2. The fields of production and best methods of distribution:
3. The prices normally and usually charged for such coal and whether current prices are just and reasonable:
4. The kind and location of consumers.

The Fuel Distributor is required to issue orders for priorities in car service, embargoes and other suitable measures in favor of or against any carrier or region, and to take other steps necessary for priority in car service and distribution of coal.

The bill fixes a fine and prison penalty for any fraud practiced by a person or corporation violating any order made by the Fuel Distributor.

A similar bill, S. 3940, was reported in the Senate, August 29, 1922.

Changes in Personnel of the U. S. Public Health Service. In accordance with regulations of the U. S. Public Health Service and the policy of replacing administrative heads every four years, the following six assistant surgeon generals have been appointed in place of the present incumbents:

Division of Venereal Diseases; Dr. Mark J. White to succeed Dr. C. C. Pierce.

Division of Marine Hospitals and Relief; Dr. F. C. Smith to succeed Dr. C. H. Lavinder.

Division of Scientific Research; Dr. A. M. Stimson to succeed Dr. J. W. Schereschewsky.

Division of Foreign and Insular Quarantine; Dr. J. D. Long to succeed Dr. R. H. Creel.

Division of Domestic Quarantine; Dr. W. F. Draper to succeed Dr. A. J. McLaughlin.

Division of Sanitary Reports and Statistics; Dr. B. J. Lloyd to succeed Dr. B. S. Warren.

One million dollars Government Reward for Discovery of Disease Cures. H. R. 12409. Introduced by Representative Sproul, August 23, 1922. Referred to the Committee on Interstate and Foreign Commerce.

The sum of $1,000,000 in ten equal annual installments is appropriated, by this measure, to any individual discovering a successful cure for tuberculosis, cancer, pneumonia, paralysis, epilepsy, or dementia praecox. A board would be established, consisting of the Surgeon General of the Army, the Surgeon General of the Navy, and the Surgeon General of the U. S. Public Health Service, to investigate any discoveries submitted and to authorize payments of the awards. This board is also empowered to recruit an advisory board, composed of eminent specialists, to facilitate its investigations. It is provided that when payment has been made for a discovery, no further payment shall be made for discovery of a treatment for the same disease.

INSTRUCTIVE DISTRICT NURSING ASSOCIATION.

Monthly Health Bulletin.

July and August showed a slight increase in work over that of the same period last year, with a total of 4,526 new patients being admitted and 49,000 visits made, but the work was light, as is customary with mid-summer months.

HEALTH CONDITIONS PECULIAR.

Certain peculiarities marked the health conditions during this period. Normally, the bulk of the work shifts almost as regularly as the seasons, from digestive diseases in summer, to respiratory in winter. But during July and August the expected increase in digestive diseases did not occur; and while respiratory diseases dropped to the usual low summer rate during July, they increased again in August, particularly bronchitis and pneumonia.

ACUTE AND COMMUNICABLE DISEASES.

Typhoid fever showed a most encouraging decrease. Four new cases were admitted in August, against 12 in August, 1921; in July, none, against 6 cases in July of last year. Measles, which have been very prevalent, dropped to 94 new cases in July, the lowest number in several months, and to 35 in August, the latter figure still, despite the sharp decline, heavier than that of August, 1921. Whooping cough increased in August.

INCREASE IN ACCIDENTS.

In July there were fewer cases of burns, traumatisms, fractures, etc., — 74 as compared with 79, — while in August there was an increase, — 103 as compared with 59 of August, 1921.

CHRONIC DISEASES.

Cancer and diseases of the heart, which have been steadily increasing for several months, showed a big drop in July, when there were only 16 new cases of cancer and 19 of diseases of the heart admitted.

In August the decrease in heart cases continued, but cancer again increased.

NUTRITION CLASSES.

The nutrition classes, which have been established in the Hyde Park Health Centre for the benefit of those children found by the physician in charge of the Child Health Clinic to be 7% or more underweight, were continued during July and August, 9 classes being held, with a total attendance of 81. A majority of these children were more than 10% underweight.

The classes have aroused a surprising interest and coöperation in both parents and children, and while the physical results have been highly satisfactory, the education resulting from the group instruction has been unexpectedly successful.

VITAL STATISTICS.

In looking over the report issued under the direction of Mr. Edgar A. Bowers, State Registrar of Vital Statistics, it occurred to the Editor that since some faulty interpretations relating to maternal deaths might exist in the mind of a casual reader, further explanation would be of assistance, and a letter was written asking for interpretation of the figures.

The report as a whole is of great value, both because of the substance, and also because of its unusually early completion and distribution. The Registrar is entitled to great credit, for one can find almost everything relating to vital statistics in the volume. The explanatory chapters aid materially in the interpretation of the figures. The reply of the Registrar is appended.

Editor, Boston Medical and Surgical Journal:

In reply to your letter of September 11 relative to an apparent discrepancy in the tables on page 76 and page 90 of the 1921 report:

I would point out that on page 76 the total number of deaths in the puerperal state is given as 580. The first item, No. 143, you will note, includes its sub-divisions A, B, and C. Also sub-divisions 145, A, B, and C, are included in 145. This occurs wherever there is an indentation in the type, and is in accordance with the international classification. However, I can easily see where one would get mixed up, and on the next printing intend to take some steps either by larger type or by a note to show that these sub-divisions are included in the items of which they are a part. On page 90 the abridged list follows the abridged list furnished by the Census Bureau, although the new abridged list has not been received, and this abridged list is made up in conformity with the old one as near as may be. You will note that items 31 and 32 in the abridged list make the total of 580 referred to on page 76.

I trust the above will explain the question asked in your letter. If there is anything further I can help you on, I will be very glad to do so.

Very truly yours,
EDGAR A. BOWERS,
State Registrar of Vital Statistics. Office of the Secretary of the Commonwealth of Massachusetts.

RÉSUMÉ OF COMMUNICABLE DISEASES

AUGUST, 1922.

GENERAL PREVALENCE.

There were 3,304 cases of communicable diseases reported during the month; for July, 1922, there were 4,093; for August, 1921, 3295 cases. For the past month there has been a marked decrease in chicken-pox, measles and scarlet fever. Diseases showing an increase are as follows: typhoid, poliomyelitis, diphtheria, whooping cough, meningitis, tetanus, septic sore throat, tuberculosis (pulmonary).

Anterior Poliomyelitis.—Fifty-five cases were reported for the month. These cases were widely distributed over the eastern part of the State, but there was no sharply localized outbreak. The number of cases for July, 1922, was 23; for August, 1921, 61 cases.

Diphtheria.—Four hundred eight-two cases were reported for the month, a considerable increase over 380 for July; for August, 1921, there were 516 cases.

Dog-bite requiring anti-rabic treatment was reported in 23 cases for the month, as against 36 for July, 1922. The number of cases reported for August, 1921, was 18.

Hookworm. — There were 31 cases reported for the month, but practically all were among aliens who are being held for deportation.

Measles was reported in 338 cases, a very marked decrease for July, 1922, when 1,275 cases were reported; August, 1921, showed 268.

Ophthalmia neonatorum was reported in 100 cases for the month, against 63 for July, 1922, and 141 for August, 1921.

Tuberculosis, pulmonary, was reported in 547 cases for the month; the number for July, 1922, was 506, and for August, 1921, 515.

Typhoid Fever.—One hundred and one cases were reported for the month, 73 for July, 1922, 113 for August, 1921.

Whooping Cough. — Four hundred eighty-three cases were reported during the month, 413 for July, 1922, 375 for August, 1921.

RARE DISEASES.

Anterior poliomyelitis was reported from Ashland, 1; Attleboro, 3; Boston, 10; Brookline, 2; Dartmouth, 1; Dudley, 1; Everett, 2; Fall River, 7; Lawrence, 1; Lynn, 2; Marblehead, 3; Medford, 1; Melrose, 1; Nantucket, 1; New Bedford, 1; Newton, 1; Northbridge, 1; Somerville, 7; Springfield, 1; Swampscott, 2; Taunton, 1; Webster, 3; Yarmouth, 1; Methuen, 1; total, 55.

Dog-bite requiring anti-rabic treatment was reported from Arlington, 1; Attleboro, 1; Belmont, 1; Billerica, 1; Boston, 3; Cambridge, 3; Lowell, 7; Lynn, 1; Methuen, 1; Somerville, 1; South Hadley, 3; total, 23.

Dysentery was reported from Adams, 1; Boston, 2; Chelsea, 2; Melrose, 1; total, 6.

Encephalitis lethargica was reported from Lynn, 1; Salem, 1; Webster, 1; total, 3.

Epidemic cerebrospinal meningitis was reported from Boston, 2; Fall River, 2; Lowell, 1; Southbridge, 1; total, 6.

Hookworm was reported from Boston, 31.

Malaria was reported from Boston, 1; Lowell, 1; total, 2.

Pellagra was reported from Boston, 1.

Septic sore throat was reported from Boston, 1; Fall River, 1; Haverhill, 1; New Bedford, 2; Salem, 3; Whitman, 1; Winchester, 1; total, 10.

Tetanus was reported from Beverly, 1; East Bridgewater, 1; Gloucester, 1; Haverhill, 1; Hingham, 1; Melrose, 1; Northampton, 1; Worcester, 1; total, 8.

Trachoma was reported from Boston, 4.

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DAMAGES ALLOWED PHYSICIAN FOR PERSONAL INJURY.

The Supreme Court of Pennsylvania says that the plaintiff, a practising physician, aged 69, while a passenger in a car, was struck on the head by a suitcase or hand satchel falling from a rack above the seat in which he was sitting. There was evidence that he was rendered unconscious, and, as a result of the injury, became unable to practise his profession to the same extent as before the accident, his earnings having decreased from $7 or $10 a day to $2.50 a day; that his eyesight and memory had become impaired, as had also his general physical condition. A verdict was rendered in his favor for $7,250. The court below, having refused a new trial, the defendant appealed. The statement of the question involved was whether the size of the verdict was manifestly too great and plainly the result of prejudice. The Supreme Court found nothing in the record indicating prejudice against the defendant, and it cannot say that the verdict was so excessive as to warrant its interference on that ground, in view of the testimony establishing the injury received by the plaintiff and its effect on him and the resultant decrease in the receipts from his professional calling; wherefore, the judgment for the plaintiff is affirmed.—*Journal of the Medical Society of New Jersey.*

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LIVES SAVED BY THE USE OF LABORATORY ANIMALS.

The Colorado Association for the Protection of Public Health is planning for the publication of reports of cases which illustrate the value of vaccines and sera derived from laboratory animals, or of any use of animals in the saving of human life.

This information will be of value in combating the opponents of the use of animals in the treatment and prevention of disease.

If physicians would report all such material in concise form for use as occasion requires, good would result.

THE IODINE SUPPLY.

J. F. McClendon, in an article in *Science* gives the results of his analysis of sea water. According to his investigations, about all of the earth's iodine is found in sea water, and amounts to sixty billion metric tons.

In order to overcome the prevalence of goiter he recommends the use of a table salt prepared from sea water. By the method recommended by him, the expense would be no greater than now exists. At the present time iodine is not found in table salt.

The addition of powdered kelp to food is recommended by Dr. Turrentine. Small amounts of kelp are not recognized, and the iodine content is valuable. Although sea foods may supply some iodine, the amount is too small to be of much value.

It is becoming quite generally believed that the goiter belt is included to a large extent in mountainous and glaciated regions.

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AMERICAN RELIEF ADMINISTRATION.

Saratov, Russia, August 25—Nearly half a million persons have been inoculated in this district, as a result of the inoculation campaign against disease being conducted throughout Russia by the American Relief Administration. Dr. John E. Toole, A. R. A. medical supervisor for this district, has submitted to Moscow figures showing that 498,128 have been inoculated with anti-cholera serum and 251,156 have been vaccinated for the prevention of smallpox.

In the smallpox vaccination almost 90 per cent. were "takes," which is regarded as a high percentage. The vaccine and other medical supplies were made possible by the American Red Cross appropriation to the A. R. A., and of surplus medical supplies furnished by the United States army.

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Obituary.

JOHN RICHARD SLATTERY, M.D.

Dr. John R. Slattery, Superintendent of St. Elizabeth's Hospital, Brighton, and private physician to his Eminence, Cardinal O'Connell, on his recent journey to Rome, dropped dead on the golf links of the Woodlawn Club at Auburndale, September 11, 1922, after a round with his brother, the Rev. Laurence W. Slattery, rector of the Church of Our Lady Help of Christians, Newtonville.

Dr. Slattery was born in South Boston, January 1, 1867, was educated in the public schools of the district, at Boston Latin School, Georgetown University, Washington, D. C., and at Harvard Medical School in the class of 1891. He settled in practice in South Boston. On the taking over of St. Elizabeth's Hospital by the Catholic Archdiocese of Boston in 1911, Dr. Slattery was appointed superintendent, headed the drive for the funds with which the five new buildings on Cambridge street, Brighton, were erected, and has been the head of the institution since.

He was created a knight of the Order of the Holy Sepulchre by Pope Pius X. and was also a member of the Third Order of St. Francis. Among the societies in which he held membership were the American Medical Association and the Massachusetts Medical Society.

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Correspondence.

ANOTHER LETTER FROM MR. NUNN.

Boston, Mass., September 1, 1922.

Mr. Editor:

May I write again to say how greatly I appreciate your courtesy and fairness in publishing my letter in answer to your editorial of Aug. 17, dealing with my radio talk on vaccination?

I wish it might be possible always to discuss the subject of vaccination with gentlemen of the medical profession, without heat or acidity on either side.

It seems quite possible to me that our friends of the medical fraternity do not realize how instinctively the average man or woman revolts at the thought of vaccination, when the matter employed in the practice is described in simple terms. In spite of the ordinary man's confidence in physicians, and his high regard for their calling, he does not readily credit the possibility of safeguarding the health of an already healthy child by infecting his blood with putrid matter taken from a diseased animal, especially if he be told that the original source of this particular strain of virus was matter taken from the pustules on the body of a human smallpox victim.

The ordinary citizen is quite certainly becoming doubtful as to the beneficial intent of ultra-scientific investigations involving human beings. Such a proposal as that contained in your editorial of August 31, to the effect that the value of vaccination be determined by subjecting two hundred children to contact with smallpox, advanced by you with apparent seriousness, is not calculated to dispel the growing sense of uneasiness, felt by many sane people, regarding the seeming trend of the so-called advanced section of the medical profession, toward human experimentation.

I appreciate that your suggestion was doubtless ironical, for it is unthinkable that you would either countenance or participate in so hideous an experiment upon children, vaccinated or unvaccinated. Yet, a suspicion is more widely entertained by the common run of people than you may be aware of, that those engaged in medical research are none too respectful of the fundamental human rights of inmates of orphanages, hospitals, and asylums, to exemption from being treated as material for clinical experimentation.

Were vaccination now, for the first time, proposed to the medical profession, I fully believe that it would be rejected, with scorn. The standard arguments for this practice, if now freshly advanced, would appeal to minds uncontaminated by a century of propaganda, as the *reductio ad absurdum* of materialism; a veritable "counsel of despair"; a vain hope of finding health and life in the very essence of disintegration and death.

Sincerely yours,
HENRY D. NUNN,
Manager and General Counsel, Medical Liberty League, Inc.

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COMMENT BY DR. CROFT.

September 7, 1922.

Mr. Editor:

I thank you for your editorial reply to the letter of the General Counsel of the Medical Liberty League on "Smallpox Treatment and the Facts Relating to Vaccination." Your courteous attitude, forceful arguments and apt similes should commend themselves to every thoughtful physician.

Your explanation of the apparent ignorance of the former president of a State Society is unquestionably true, and typical of hundreds of us whose special work does not require accurate, detailed and up-to-date information on the methods of preparing the different things which we use for therapeutic ends, but we are and should be "thoroughly dogmatic" as to the efficacy of the underlying principles when based on extended experiences and which have not yet been successfully controverted.

You do well to emphasize the solemn obligation which we physicians have assumed to protect against disease those who through ignorance or otherwise, cannot help themselves, and that the proper discharge of such obligation may even require entering upon an unpleasant and personally disagreeable controversy in order that authoritative facts shall not be undermined by sophistry and specious arguments.

The false interpretations being placed on unguarded remarks of physicians, by the supporters of the various cults, emphasize anew the obligations which physicians are under to inform themselves of proven facts, to defend them on occasion, and to change their attitude only as a result of scientific proof. Too many of us today are aiding false doctrine by our supine attitude of indifference or cowardice.

Yours truly,
B. P. CROFT.

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THE HARRISON NARCOTIC ACT.

September 8, 1922.

Mr. Editor:

In your editorial discussion of the Harrison Narcotic Act, in the issue of August 31, page 341, you say:

> "The registration of physicians with the right conferred to use narcotic drugs is logical, but revenue tax is abhorrent and should be repealed."

The tax is the sole foundation upon which the Harrison Narcotic Law rests. Repeal the provisions of the act that impose the tax and the entire jurisdiction of the United States Government over the manufacture, sale and distribution of narcotic drugs within the boundaries of the State falls, except as the Federal Government might regulate the distribution of such drugs through the mail.

It can hardly be denied that the United States Government in enacting the Harrison Narcotic Law utilized its constitutional taxing power in a way that was never conceived by the framers of the Constitution, to take over certain police duties normally belonging to the State. Its motive, however, was such a worthy one and the trespass has been tolerated so long and has been so broadly sustained by the United States Supreme Court that there is no likelihood that the United States Government will retire from the field.

The most that can be hoped for is that the tax will be reduced to the nominal amount originally fixed, $1.00, or possibly less, and that the regulations governing the medical profession in prescribing and administering narcotic drugs may be kept within the limits of the Act and within reason. A request for a reduction of the tax was submitted to the United States Treasury Department by the Committee on Narcotic Drugs, Council on Health and Public Instruction, under date of May 6, 1921, and the matter is still pending.

Yours very truly,
Wm. C. Woodward,
Executive Secretary.

Note: Our esteemed correspondent agrees with the spirit but objects to the text of the editorial in question. A registration fee sufficient to pay the cost of operation of the system is logical and would not be construed as a tax. When the amount provides for revenue it is then that objection can properly be made.

Dr. Woodward, in the last part of his communication, submits evidence of his belief that the "tax" is too large. Most physicians are not seriously affected by the three dollars charged. It is the spirit of the Government, in its evident purpose to impose an unnecessary tax on members of a profession who have contributed more in unpaid service to the people than any other class of citizens, that makes the tax abhorrent. Physicians who are not criminals should not be compelled to contribute money for the suppression of crime even though the criminal makes unlawful use of drugs which the doctor employs legally.

Would it not be as logical to tax doctors for the maintenance of that part of police departments that is empoyed in investigating and prosecuting abortionists?

—Editor

EXPERTO CREDE.

Mr. Editor:

In the Boston Medical and Surgical Journal, in the review of my booklet, "The Treatment of Ordinary Diseases," exception is taken to my views about acute middle-ear disease, acute appendicitis and digitalis. My judgment in these affections and in the use of digitalis has all been supported time and again already, by statements based upon a wide experience. It is unfortunate for those practitioners of a late date, that in their practice and convictions, they are supported almost solely by what they hear and read in medicine, which unfortunately does not take count sufficiently, if at all, of what has been acquired by lifelong observation, both in hospital and private practice. Further, it would be well, not infrequently, if the physicians who write reviews of books, would first acquaint themselves with previous works of the writer whom they criticize.

Beverley Robinson.

New York, Sept. 12, 1922.

PHYSICIANS REGISTERED BY THE BOARD OF REGISTRATION IN MEDICINE IN THE EXAMINATION HELD JULY, 1922.

Abrams, Jacob
Albert, Simon
Apelian, Albert Suleiman
Apple, Bernard
Atkins, Samuel Maurice

Baker, Henry
Barber, Carroll Glenn
Batal, John Thomas
Baxter, George Raymond
Bennett, Max
Berenson, Wyman
Berger, Benjamin Johnathan
Billard, Emmanuel William
Blake, Philip Warren
Bolan, Beatrice
Brennan, Earle Henry
Briggs, Harry Goddard
Bruning, Paul Henry
Burgoyne, Roger Merton
Butterfield, Clifford Allen

Calderone, Angelo
Carogana, Anthony Peter
Casey, Daniel Francis, Jr.
Catron, Lee Riley
Champ, Anthony Marius
Cohen, William Benjamin
Coleman, Joseph Edwards
Connor, Thomas John
Consales, Peter Augustine

Dallas, Marion
Davidoff, Leo Max
Davis, Hallowell
Downey, Edward Thomas
Dunham, Rand Augustus
Dunscombe, William Colby

Edlin, Jacob Vernon
Elliott, John Joseph, Jr.
Enander, Fred Conrad
Ernlund, Carl Helge
Evers, Harold

Feinberg, Barnice
Finn, Richard William
Fipphen, Earl Edward
Flashman, David Harry
Fong, Theodore Claremont Chen
French, Harry Tapley
French, Joseph Henry
Fuller, Wilfred Joy

Garfin, Samuel William
Goldberg, Bernard Isadore
Goldman, Joseph
Goldstein, Henry
Gelerman, Joseph Max
Gilbert, Raymond Edwin
Givan, James Alexander
Green, David Samuel
Green, Isadore
Grossman, Julius

Hartigan, John Joseph
Heavey, Thomas Joseph
Hooper, Raymond Ernest

Isherwood, Ainsworth Varnum

Johnson, Bessie Belle
Josselson, Israel
Joyce, Daniel Leo

Kahn, George
Kaplan, Edward
Kendrick, Thomas Paul
King, William Aldrich
Klein, Bernard Jacob
Kreplick, Morris Spellman

Lamb, Edward James
Levenson, Albert
Levenson, Walter Sabin
Lane, Theron Irvin
Lezberg, Joseph
Listernick, Sidney Solomon
Little, Mabelle Gertrude
Livingston, Myron
Lund, Charles Carroll
Lussier, Joseph Herménégilde
Lynch, Clement

McQuade, Frank Joseph
Maclachlan, Kenneth Long
Madsen, William Joseph
Marcus, Saul Maurice
Marshall, Orland Smith
Masters, Jacob Meyer
Meachen, John Willis
Miller, Howard Stephen
Moriarty, William Thomas

Norwich, Louis Edward

O'Connell, Maurice Winthrop
Olson, Bertha Catherine

Park, Harry Linwood
Parsons, Edward Field
Parsons, Neil Lehan
Perkins, Edward Burton
Perry, Edward Louis
Pepin, William Reid
Pollack, Benjamin
Price, Willis Gittens

Renehan, Lawrence Arthur
Reynolds, Francis Albert
Richardson, Guy Lewis
Ritvo, Max
Robinson, Leda Helen
Rodin, Oscar
Rogers, Harriet Emmeline
Rotman, Nelson
Rutkoff, Benjamin

Schwartzman, Harry
Shea, Cyril Emmett
Shohet, Gabriel Harry
Skvirsky, Solomon Louis
Small, Abraham Solomon
Smiley, Harold Everett
Smith, Roswell Haydn
Sprague, Claire
Suarez, Jenaro
Sutton Lee Edward, Jr.

Talboy, James Henry
Tennis, Max
Thomas, Elizabeth Alice
Thompson, Howard King
Tillotson, Kenneth James
Titelbaum, Barnett Charles
Triedman, Harry
Tyler, Charles Marshall

Van Wart, William Haley
Ventura, Francis De Salles
Versteegh, Arnoldus Dirk

Wallner, Edmund
Weeks, Elsie Whiting
Whitney, Ezra Augustus
Wolff, Thomas Conrad

Yaffe, Joseph Philip
Yang, You Chang
Yudelman, Abraham Harold

The applicant from the University of Budapest, formerly reported as under consideration, was subsequently registered.

DISEASES REPORTED TO THE MASSACHUSETTS DEPARTMENT OF PUBLIC HEALTH.

WEEK ENDING AUGUST 26, 1922.

Disease.	*Cases.*	*Disease.*	*Cases.*
Anterior poliomyelitis	16	Lobar pneumonia	21
Chicken-pox	12	Scarlet fever	33
Diphtheria	138	Septic sore throat	1
Dog-bite	1	Syphilis	26
Dysentery	1	Suppurative conjunctivitis	7
Epidemic cerebrospinal meningitis	2	Tetanus	1
German measles	3	Trachoma	2
Gonorrhea	101	Tuberculosis, pulmonary	116
Influenza	3	Tuberculosis, other forms	10
Measles	65	Typhoid fever	28
Mumps	15	Whooping cough	104
Ophthalmia neonatorum	12		

WEEK ENDING SEPTEMBER 2, 1922.

Disease.	*Cases.*	*Disease.*	*Cases.*
Anterior poliomyelitis	8	Scarlet fever	45
Chicken-pox	7	Septic sore throat	1
Diphtheria	99	Syphilis	31
Dog-bite requiring anti-rabic treatment	7	Suppurative conjunctivitis	10
Dysentery	1	Tetanus	4
Encephalitis lethargica	2 2	Tuberculosis, pulmonary	113
German measles	1	Tuberculosis, other forms	8
Measles	59	Typhoid fever	31
Mumps	10	Whooping-cough	104
Ophthalmia neonatorum	21	Hookworm	3
Pneumonia, lobar	19	Gonorrhea	95
		Influenza	1

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NOTICES.

BRISTOL NORTH DISTRICT MEDICAL SOCIETY. Fall Meeting, Taunton Woman's Club, Thursday evening, September 21, 1922. 6.30 Supper. 7.30 Business Meeting. 8.00 Dr. Frank H. Dunbar of the Department of Pathology and Bacteriology of the Tufts College Medical School will speak on "The Physician and the Laboratory."

Arthur R. Crandell, M.D.,
Secretary.

NOTICE TO SECRETARIES.

Secretaries of societies are requested to forward notices of coming meetings for publication. Reporters will please forward early reports of meetings that have been held with a concise account of the salient features.

UNITED STATES CIVIL SERVICE EXAMINATION.

RESEARCH ASSISTANT IN CHILD HYGIENE.

Receipt of Applications to Close October 10, 1292.

The United States Civil Service Commission announces an open competitive examination for research assistant in child hygiene. Vacancies in the Children's Bureau, Department of Labor, at $1600 to $2000 a year, and in positions requiring similar qualifications, at these or higher or lower salaries, will be filled from this examination, unless it is found in the interest of the service to fill any vacancy by reinstatement, transfer, or promotion. For particulars apply to United States Civil Service, Washington, D. C.

SOCIETY MEETINGS.

A list of society meetings is herewith published. This list will be changed on information furnished by the secretaries of the societies, and will appear in each issue. The incomplete details and omission of names of many societies is because the information has not been furnished, although the JOURNAL has requested information for publication. Free publication of dates of meetings may accommodate many members of societies. Several physicians have spoken of the importance of having a schedule of meetings published so that arrangements may be made for special meetings on dates which may not conflict.

It may be possible to adopt the custom of the publication of notices of stated meetings in the JOURNAL and if this is generally understood, secretaries of societies could save time and expense. If general coöperation can be secured this plan can be made permanent.

DISTRICT SOCIETIES.

Barnstable District:—Hyannis,—November 3, 1922, February 1923, (Annual Meeting)—May 4, 1923.

Bristol North District:—Place undecided—September 21, 1922.

Bristol North, Bristol South, Barnstable and Plymouth Districts will hold joint meetings sometime this fall.

Bristol South District:—Fall River,—November 2, 1922, May 1923.

Essex North District:—Haverhill, (Semi-Annual Meeting)—Jan. 3, 1923. Y. M. C. A. Building, Lawrence, (Annual Meeting)—May 2, 1923.

Essex North, Essex South, Middlesex North and Middlesex South Districts will hold joint meetings October 18. Place undecided.

Hampden Districts:—With Hampshire District in Holyoke. Early part of September. Regular meeting in October.

Hampshire District:—With Hampden District in Holyoke. Early part of September.

Middlesex North District:—Meetings Wednesday, October 25, 1922; Wednesday, January 31, 1923.

The four western districts plan to hold a joint meeting early in October.

STATE, INTERSTATE AND NATIONAL SOCIETIES.

New England Surgical Society. 5th Annual meeting will be held at Burlington, Vermont, on September 22 and 23, 1922; P. E. Truesdale, Fall River, Mass., Secretary.

NEW ENGLAND TUBERCULOSIS CONFERENCE, Augusta, Maine.—September 28, 29 and 30. Sessions will be held at the State House. Headquarters at the Augusta House.

September 28. Speakers: Dr. Arthur L. Wallace, Dr. Stephen J. Mosher, R. V. Spencer, Miss Elena M. Crouch, Dr. Charles Duncan.

September 29. Speakers: Dr. E. O. Otis, Dr. R. B. Kerr, Dr. J. Pinckney, Basil G. Eaves, Dr. E. R. Kelley, Dr. E. D. Merrill.

September 30. Speaker: Dr. J. C. Cobb.

At noon a modern health crusade luncheon will be held at the Augusta Hotel. Speaker will be Harold W. Slocum.

October, 1922. Boston Tuberculosis Association. Tuberculosis Institute for Physicians will be held on October 5 and 6 at the Massachusetts General Hospital, Bernice W. Billings, Boston, Executive Secretary. October, 1922. The New England Society of Psychiatry will hold its next meeting on October 5th, at the Connecticut State Hospital, Middletown, Connecticut. Readers: Dr. Walter Timme and Dr. Frankwood E. Williams, New York City. New England Dermatological Society, Wednesdy, October 11, 1922, at 3:30 P. M., in the Skin Out-Patient Department, Massachusetts General Hospital, C. Guy Lane, Secretary. Clinical Congress of the American College of Surgeons will be held in Boston, Mass., on October 23-27, 1922, Franklin H. Martin, Chicago, Director-General. Massachusetts Association of Boards of Health, October 26, 1922, Boston, Mass., W. H. Allen, Mansfield, Mass., Secretary New York and New England Association Railway Surgeons 32nd Annual Meeting at New York City, October 28, 1922, Donald Guthrie, Sayre, Pa., Secretary.

November, 1922. Massachusetts Society of Examining Physicians, (Date and place of meeting undecided), Hilbert F. Day, Secretary. National Cancer Week, November 12 to 18.

December, 1922. New England Dermatological Society Meeting, Wednesday, December 13, 1922, at 3.30 P. M., in the Surgical Amphitheatre, Boston City Hospital, C. Guy Lane, Secretary.

January, 1923. Massachusetts Society of Examining Physicians, (Date and place undecided), Hilbert F. Day, Secretary. Massachusetts Association of Boards of Health, January 25, Annual Meeting, Boston, W. H. Allen, Mansfield, Mass., Secretary.

February, 1923. New England Dermatological Society Meeting, February 14, 1923, at 3.30 P. M., in the Skin Out-Patient Department, Massachusetts General Hospital, C. Guy Lane, Secretary.

March, 1923. Massachusetts Society of Examining Physicians, (Date and place undecided), Hilbert F. Day, Secretary.

April, 1923. New England Dermatological Society Meeting, April 11, 1923, at 3.30 P. M., in the Surgical Amphitheatre, Boston City Hospital, C. Guy Lane, Secretary. Massachusetts Association of Boards of Health, April 26, 1923, Boston, W. H. Allen, Mansfield, Mass., Secretary.

May, 1923. Massachusetts Society of Examining Physicians, (Date and place undecided). American Pediatric Society Meeting, May 31, June 1, and 2, 1923, at French Lick Springs Hotel, French Lick, Ind., H. C. Carpenter, Secretary.

June, 1923. American Medical Association, San Francisco, June 25-29, 1923, Alexander R. Craig,* Chicago, Ill., Secretary.

July, 1923. Massachusetts Association of Boards of Health, July 26, Nantasket, W. H. Allen, Mansfield, Mass., Secretary.

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*Deceased Sept. 2, 1922.